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ABSTRACT

This theme issue on talent development in students who are gifted or have special talents contains several feature articles, editorials, and a calendar of events. Articles have the following titles and authors: "Talent Development in Education" (John F. Feldhusen) proposes four domains for fostering talent in all youth: academic-intellectual, artistic, vocation-technical, and interpersonal-social. "Schools Are Places for Talent Development: New Directions for the Schoolwide Enrichment Model" (Joseph S. Renzulli) discusses use of the total talent portfolio and integration of gifted education practices into general education. "The Development of Academic Talent" (Joyce VanTassel-Baska) urges the employment of two models of talent development--the traditional talent search model and a curriculum-based approach to upgrade the level of curriculum for all learners and reveal latent talent in academic and nonacademic areas. Other articles include: "Art Teachers, Child Art, and Abilities: Implications for the Concept of High Abilities in the Visual Arts" (Gilbert Clark); "Resolving Inequities: Discovery and Development of Talents in Student Populations Traditionally Underrepresented in Gifted and Talented Programming" (Donna Rae Clasen); and "Dealing with the Challenges of Reform and Restructuring: Will Gifted Education Survive?" (Donald J. Treffinger). (Most papers contain references.) (JDD)

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COMMUNICATOR

TALENT DEVELOPMENT

ED 365 039

Talent Development in Education

by John F. Feldhusen

Talents emerge from general ability as a combination of genetic dispositions, home and school experiences, and students' unique interests and learning styles. Gagne (1985) described a general theoretical pattern of talent development in youth, and other researchers (Bloom, 1985; Gagne, 1985; Keating, 1979; MacKinnon, 1978; Tannenbaum, 1983; Taylor, 1978; and Reis & Renzulli, 1986) have clarified the nature and development of talents. We see genetic factors as determining potential strengths and setting limits to the extent of talent development. Those who are likely to go on to high level talent development will often exhibit precocity early in their lives. Abilities, aptitudes, and intelligences emerge as a result of experiences, motivations, and styles. Creative insight skills (Davidson & Sternberg, 1984), a functional knowledge base (Glaser, 1984), and metacognitive creativity skills (Beyer, 1987), provide the final underpinning for the emergence of specific talents (Feldhusen, 1992).

Aside from the philosophical and psychological soundness of the talent conception, identifying and developing talent in all children frees us from the problems of identification of "the gifted few" and possible underrepresentation of special populations as well as the stigmatizing effects of the gifted label. It also forces us instead to: (1) focus our instructional expertise on the search for talent and, (2) on fostering talent in all youth, not just the labelled few. In the process of identifying talent in all children we should also become aware of those who have exceptionally high talent potential. Thus, in a sense we have wedded two programs, gifted education and talent development, into one, more potentially effective and acceptable, program. Educators currently working in programs for the gifted should have much of the needed expertise to effect the combination, but other staff in schools can also be contributors to the new program.

"Talent development is the 'business' of our field, and we must never lose sight of this goal, regardless of the direction that reform efforts may take." This insightful pronouncement by Renzulli and Reis (1991, p. 26) sets the stage for a major reconceptualization of gifted education and for our efforts to bring underserved populations to gifted education. It is certainly clear that large segments of some minority, economically disadvantaged, and culturally different populations are not represented in programs for the gifted and talented. The current approaches to identification and program services in the United States favor some groups and neglect others. The conception of giftedness used most often in programs for the gifted conceptualizes human abilities as synthesized in a general unitary ability called "intelligence" or "giftedness." The identification process and the program services work well for the favored populations. However, an alternative conception, namely "talents," "aptitudes," or "special intelligences" may serve us better in defining and nurturing high level abilities in both the underserved and the favored populations.

The concept of "aptitude," "talent," or "special intelligence" suggests a more analytical and more diverse view of human abilities, abilities which may be nurtured, and aptitudes which are amenable to development. The concept of giftedness which emerged beginning with the work of Terman (1925) and flour-

Continued on page 35

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GUEST EDITORIAL

Talent Identification and Development

John Feldhusen, Guest Editor

To be *gifted* is to know that one is very bright, highly intelligent, or of high ability in general. To be *talented* is to know the specific aptitude(s) or strengths one possesses. While it might be generally motivating to know that one is gifted, it is more valuable to know one's *specific* talents or abilities so that educational experiences can be focused on growth in the talent area(s).

The term *talent* implies both aptitude and interest. Furthermore it clearly denotes abilities that grow and can be nurtured in children. What characterizes generally gifted or specifically talented youth is precocity. That is, they learn more rapidly than other children, especially in their talent domains. Thus, they get more and more ahead of other children and stay ahead if school experiences are at an appropriate level and pace, that is, commensurate with their talent potential.

Many forces work to retard the growth of talented youth and pull them back to normal or average levels of performance. Thus, a great many children are never able to develop their talents fully, and they settle for mediocre achievements. To strive for excellence is to be able to develop one's special talents to the highest level possible.

The articles in this special issue of the Communicator all focus on aspects of talent recognition and development. The lead article which I wrote delineates the general nature of talent identification and development and argues that "talent" is a more useful concept than "gifted" or "giftedness." Joyce VanTassel-Baska focuses her analysis on the development of academic talents with particular attention to the role of curriculum as a vehicle for both identifying and nurturing talent. Gilbert Clark, on the other hand, attends to the recognition and nurturance of talent in art. He argues that students who possess artistic talent need rigorous training in the knowledge, skills, and understandings of the artist. Donna Clasen addresses the problem of finding and nurturing talent among youth from populations that are often underrepresented in gifted programs. She presents a set of eight rules or guidelines for talent development in urban settings.

Joseph Renzulli asserts that schools are and should be centers for talent development. However, he also acknowledges that programs for the gifted are in jeopardy and new directions must be sought. He suggests a set of adaptations of his school-wide enrichment model as an approach to the current crises in gifted education. Finally, Donald Treffinger calls for a bold new reconceptualization of gifted education that seeks to identify gifts and talents in all youth and to link gifted education with the school reform movement.

A complete reexamination of the tenets and bases as well as the language of gifted education is needed. New paradigms must be found, but hopefully our gains over the last twenty years since the Marland report will not be lost. The bottom line is that youth who exhibit special talents have special educational, social, and emotional needs that call for adaptations in school programs as well as home and community services. Hopefully these reports by leaders in gifted education point the way to a reform of gifted education that will go hand in hand with the school reform movement and lead to new school programs that serve the needs of all youth more effectively.

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CAG encourages all interested parties to submit articles for publication. All submissions will be given careful consideration. Photos and camera-ready art work are particularly desirable. Student work should be accompanied by teacher's name and school. Send all material with your name, address, and phone number to Jean Drum, *Communicator* Editor, 7822 Belgrave Avenue, Garden Grove, CA 92641. You may phone Ms. Drum at 714/892-1745.

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PRESIDENT'S COLUMN

Sandra Kaplan

Political vs Educational Correctness

Being "correct" these days is valued highly. Being "PC" or politically correct is acclaimed by many as an important variable in social etiquette. Can educators and parents be politically correct while being educationally correct?

Today, it is politically correct to support heterogeneity; it always has been educationally correct to support individual differences and the rights of students to be appreciated for their differences.

Today, it is politically correct to identify an at-risk population; it always has been educationally correct to consider every student as potentially at-risk and to structure curriculum and instruction to deter such risks.

Today, it is politically correct to recognize *all* students as gifted or talented; it always has been educationally correct to create an environment to encourage the exhibition of ability, giftedness and outstanding performance.

Today, it is politically correct to believe all students can succeed; it always has been educationally correct to differentiate curriculum so that students' success is commensurate with their abilities and interests.

Today, it is politically correct to recognize diversity in our society; it always has been educationally correct to include a multi-cultural perspective in the curriculum and to develop global awareness for our students.

How does your educational program for the gifted reconcile political and educational correctness?

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CAG Office Has Moved

With the hiring of Carol Brown Spencer as the new Administrative Assistant for CAG and the retirement of Sharon Mountford, the CAG office has moved from Canoga Park to Mountain View. The new office is set up and functioning. Please send mail to the new address and make a note of the new phone numbers.

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CALENDAR

September 10-12, 1993
CAG Teacher Institute
Differentiating the Curriculum for Gifted Students
Asilomar Conference Grounds, Monterey
For information call 415/965-0653.

September 18, 1993, 8:30 am to noon
Back to School Conference, Mission Region
Euclid Avenue School, Los Angeles
For information call Vicki Steinitz, 213/263-6792

October 23, 1993
Santa Lucia Region Conference
Challenges! Today's Gifted and Talented
For information call 408/453-6521.

October 30, 1993
Palomar Region Conference
Kindle the Spirit
San Diego Convention Center
For information call 619/453-5350, evenings .

November 3-7, 1993
40th Annual Convention of the National Association for Gifted Children
Atlanta, Georgia
For information call 202/785-4268.

March 4-6, 1993
32nd Annual CAG Conference
Oasis for Cultural Diversity
Palm Springs Convention Center and Wyndham Hotel
For information call 415/965-0653.

Schools are Places for Talent Development: New Directions for the Schoolwide Enrichment Model[1]

by Joseph S. Renzulli

Problems cannot be solved at the same level of consciousness that created them!
Albert Einstein

The Fix We Are In!

The types of programs for the gifted that have existed over the past several decades are in serious jeopardy! Reasons for the decrease in services, as we have come to know them, have been described in detail in a number of articles (Gallagher, 1991; Renzulli and Reis, 1991; Treffinger, 1991; VanTassel-Baska, 1991); but it is worth summarizing, as background for this article, the two major causes of the cutbacks that are taking place across the nation. First, the declining economic health of the country has placed all social, educational, and public service programs in severe competition with one another for scarce dollars. Educational programs for students with superior abilities have always received a low priority in the presence of competition with what are perceived to be more pressing needs of the overall educational system. Traditional justifications for gifted programs based on arguments about "the needs of gifted students," and even arguments with economic overtones ("...the nation's greatest natural resource") simply don't hold much influence at a time when books such as Jonathan Kozol's *Savage Inequalities* (1991) point out in graphic fashion the plight of vast numbers of at-risk students.

Second, numerous school reform initiatives have called into question the practices typically associated with programming for students with high potentials. Ability grouping, advanced classes, and opportunities to pursue advanced content and special interests are viewed as undemocratic by reform advocates who are heavily invested in achieving greater equity for lower achieving students. To give you some idea about the extremes to which ideologies are being carried, one state department of education recently announced that it will withhold state funding (not just G/T funds) from districts that do not do away with all forms of ability grouping (Schmidt, 1993). Many other states and districts are examining national trends toward total heterogeneous grouping and a standardized curriculum for all students, variously referred to as curriculum frameworks, standards, or outcome based education. Accompanying these ideologies has been a good deal of negative press about special programs for gifted students and the people who support them. Advocates of services for gifted and talented students, even the liberals among us who favor more flexible approaches to talent identification and development, are being accused of taking a stand "against our democratic ideals." Somewhere in all the rhetoric about improving our schools, we seem to have lost sight of an ideal upon which our our education system, and indeed, the very foundations of our democracy, are based. Simply stated, this ideal asserts that the uniqueness and individuality of *every* person should be honored and respected. Translated into educational terms, this ideal requires that learning experiences for all students should be arranged so that whatever paths students travel and whatever distances they travel must be appropriate to their unique abilities, interests, and learning styles. If we do not develop specific techniques for achieving this ideal, our educational system will degenerate into a homogeneous, one-size-fits-all curriculum that continues to drive down the overall performance of our entire school population.

Reexamining The G-Word

Practices that have been a mainstay of many special programs for the gifted are being absorbed into general education by reform models designed to upgrade the performance of all students. This integration of gifted program know-how is viewed by the writer as a favorable development for two reasons. First, the adoption of many special program practices is indicative of the viability and usefulness of both

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the know-how of our field and the role that specialists can and should play in total school improvement. If we are unwilling to share this know-how and to develop ways of working within the context of the powerful school reform movement, then we will continue to be excluded from the reform conversation, and the positions of specialists will continue to be eliminated. Second, many of the practices being absorbed into general education should be a part of the regular curriculum. I have always maintained that all students should have opportunities to develop higher order thinking skills and to pursue more rigorous content than is typically found in today's "dumbed down" textbooks. I have also argued that we should be using the ways in which students respond to enriched learning experiences as a rationale for providing differentiated learning opportunities, resources, and encouragement for all students. This argument reflects a democratic ideal that accommodates the full range of individual differences in the entire student population, and it opens the door to programming models that will help us to develop the talent potentials of many at-risk students who traditionally have been excluded from admission to special programs for the gifted. In order to operationalize this ideal, we need to "get serious" about the things we have learned during the past few years about both programming models and human potential.

A wide variety of research on human abilities (Bloom, 1985; Gardner, 1983; Renzulli, 1986; Sternberg, 1988) has clearly and unequivocally pointed to justification for much broader conceptions of talent development, conceptions that argue against the restrictive student selection procedures that guided identification procedures in the past. Lay persons and professionals at all levels have begun to question the efficacy of programs that rely on narrow definitions and total reliance on IQ scores and other cognitive ability measures as the primary method for identifying which students can benefit from differentiated services. *Continued support for the entire concept of talent development requires that we apply the more flexible procedures that are part of the know-how of gifted education to general school improvement.* These procedures have been largely restricted to small numbers of students by a relatively conservative gifted establishment. Continued support also requires that we pay serious attention to including traditionally under-represented groups and students whose potentials are manifested in other ways in addition to cognitive ability measures. Finally, continued support requires that special opportunities, resources, and encouragement should be directly related to the *behavioral* characteristics that brought individual students to our attention in the first place. Special services should be viewed as opportunities to develop "gifted b viors" rather than merely find and certify them. In this regard, we should judiciously avoid saying that a young person is either "gifted" or "not gifted." It is difficult to gain support for talent development when we use as a rationale a statement such as "Elaine is a gifted third grader." It is precisely this kind of statement that offends many people and raises all of the accusations of elitism that have plagued our field. But note the behavioral orientation when we say: "Elaine is a third grader who reads at the adult level and who has a fascination for biographies about women of scientific accomplishment." Now note the logical and justifiable services provided for Elaine:

Continued support for the entire concept of talent development requires that we apply the more flexible procedures that are part of the know-how of gifted education to general school improvement.

1. Under the guidance of her classroom teacher, Elaine was allowed to substitute books in her interest area for the third grade reader. The schoolwide enrichment teaching specialist helped the classroom teacher locate these books, and they were purchased from the enrichment program budget.
2. Elaine was allowed to leave the school two afternoons a month (usually on early dismissal days) to meet with a mentor who is a local journalist specializing in feminine issues. The schoolwide enrichment teaching specialist arranged transportation with the help of the school's parent volunteer group.
3. During time made available through curriculum compacting in her strength areas (i.e., reading, language arts and spelling), the schoolwide enrichment teaching specialist helped Elaine prepare a questionnaire and interview schedule to be used with local women scientists and female science faculty members at a nearby university.

Could even the staunchest anti-gifted proponent argue against the logic or the appropriateness of these services? The classroom teacher was delighted with the services because she was the person who identified Elaine's special ability and interest, she was involved in some of the planning, she had a choice in scheduling Elaine's out-of-class time, and she received help from the resource teacher in locating appropriate books for Elaine. This caused the classroom teacher to view the special program as an extension of the general education program, and she viewed the enrichment specialist as a partner in Elaine's education rather than as a competitor.

Finally, note that the recommended services are far different from the usual practice of taking Elaine and all the other "gifted third graders" off for a few hours a week to practice thinking skills and logic problems, to participate in the ubiquitous mythology or dinosaur unit, or to engage in creative ways of making chocolate fudge! When programs focus on developing the behavioral potential of individuals, or small groups who share a common interest, it is no longer necessary to organize groups merely because they all happen to be third graders. And the role of the resource teacher takes on unique dimensions because it focuses on the development of individual talent potentials. The schoolwide enrichment teaching specialist in this case was truly a resource to Elaine because she did not replicate the role of a regular instructor, and she was a resource to the classroom teacher because she provided specific books, the location and purchase of which the classroom teacher would not ordinarily be able to pursue.

New Directions for the Schoolwide Enrichment Model

The programming model that we have advocated since the early 1970's has always argued for a behavioral definition of giftedness and a greater emphasis on applying gifted program know-how to larger segments of the school population. The present reform initiatives in general education have created an atmosphere in which there is much greater receptivity for more flexible approaches, and accordingly, we have reconfigured the Schoolwide Enrichment Model (SEM) to blend into school improvement activities that are currently taking place throughout the country. Space does not permit a detailed description of the the full model; however, the following sections will describe the school structures upon which we have targeted existing components of the model, and one component (The Total Talent Portfolio) will be described in greater detail for purposes of illustration. A graphic representation of the reconfigured model is presented in Figure 1. The right hand column of this figure lists the school structures targeted for change, and the left hand column lists SEM components.

1. The Regular Curriculum

The Regular Curriculum consists of anything and everything that is a part of the predetermined goals, schedules, learning outcomes, and delivery systems of the school. The regular curriculum might be traditional, innovative, or in the process of transition, but its predominant feature is that authoritative forces (i.e., policy makers, school councils, textbook adoption committees, state regulators) have determined that the regular curriculum should be the "centerpiece" of student learning. Our efforts to influence the regular curriculum fall into three categories. First, the challenge level of required material should be differentiated through processes such as curriculum compacting, textbook content modification procedures, and group jumping strategies. Second, systematic content intensification procedures should be used to replace eliminated content with selected, in-depth learning experiences. Third, types of enrichment recommended in the Enrichment Triad Model (Renzulli, 1977a) should selectively be integrated into regular curriculum activities. Although our goal in the SEM is to influence rather than replace the regular curriculum, it is conceivable that the application of certain SEM components and related staff development activities might eventually result in substantial changes in both the content and instructional processes of the entire regular curriculum.

2. The Enrichment Clusters

The enrichment clusters are non-graded groups of students who share common interests, and who come together during specially designated time blocks to pursue these interests. All teachers (including music, art, physical education, etc.) are involved in teaching the clusters; and their involvement in any particular cluster should be based on the same type of interest assessment that is used for students in selecting clusters of choice. Community resource persons should also be invited to participate in the enrichment clusters. The organiza-

The Schoolwide Enrichment Model: Relationship Between Components and Targeted School Structures

Joseph S. Renzulli

School Structures	Service Delivery Components
The Regular Curriculum	• Curriculum Compacting • Textbook Content Modification • Content Intensification • Application of Multiple Menu Curriculum Development Strategies • Type I Enrichment (General & Subject Related) • Type II Enrichment (General & Subject Related) • Type II Enrichment (Subject Related) • Systematic Group Jumping Procedures
The Enrichment Clusters	• Group "Jumping" Procedures • Multiple/Multiple Talent Pools • Type I's in Talent Development Areas • Type II's Related to Product Development • Group Type III's • Focus on Product Development Through Enrichment Learning & Teaching
The Continuum of Special Services	• Advanced Level Type III's • Type II Mini-Courses As Needed • Academic, Personal, & Career Counseling • Counseling for Underachievers • Arrangement of Mentorships & Internships • Arrangements for Summer Programs, College Courses, & Academic and Artistic Fairs and Competitions • Parental Support for Talent Development

The Total Talent Portfolio | Enrichment Learning and Teaching

The Schoolwide Enrichment Team | Staff Development Model | Curricular Materials and Resources

The Schoolwide Enrichment Teaching Specalist | The Schoolwide Enrichment Model Network (SEMNET) | Parent Orientation, Training and Involvement | A Democratic School Governance Plan

Organizational Components

Figure 1

tional pattern for enrichment clusters is called multiple/multiple talent pools, and the model for learning used with enrichment clusters is based on an inductive approach to the pursuit of real-world problems rather than traditional, didactic modes of teaching. This approach, entitled enrichment learning and teaching, is purposely designed to create a learning environment that places a premium on the development of higher order thinking skills and the authentic application of these skills in creative and productive situations. The theory underlying this approach is based on the work of constructivist theorists such as Jean Piaget and Jerome Bruner, and applications of constructivist theory to classroom practice (e.g., Atkin and Karplus, 1962; Lampert, 1984; Lawson, 1978, and Linn, Chen, and Thier, 1977). Enrichment clusters are excellent vehicles for promoting cooperativeness within the context of real-world problem solving, and they also provide superlative opportunities for promoting self-concept. A major assumption underlying the use of enrichment clusters is that *every child is special if we create conditions in which that child can be a specialist within a speciality group.*

Enrichment clusters allow students and adults who share a common interest and purpose to come together for given periods of time. Like extra-curricular activities and programs such as 4-H and Junior Achievement, the main rationale for participation in one or more clusters is that *students and teachers want to be there.* Selection of an enrichment cluster, however, is not a random or spontaneous process. Interest assessment procedures, examples of previous positive involvement in curricular or non-school activities, and highly positive reactions to purposefully selected interest development activities are all used to help young people and adults make decisions about which enrichment cluster(s) they might like to select for given periods of time.

Enrichment clusters are organized around major disciplines, interdisciplinary themes, or cross-disciplinary topics (e.g., an electronic music group or a theatrical/television production group that includes actors, writers, technical specialists, costume designers, etc.). At the upper grade levels, when interests become more specialized, groups within the general disciplines further subdivide into more focused interest groups. These arrangements are a programmatic application of Gardner's Theory of Multiple Intelligences (Gardner, 1983). The enrichment clusters are not intended to be the total program for talent development in a school, but they are a major vehicle for stimulating interests and developing talent potentials across the entire school population. They are also vehicles for staff development in that they provide teachers an opportunity to participate in enrichment teaching, and subsequently to analyze and compare this type of teaching with traditional methods of instruction. In this regard the model promotes a spill-over effect by encouraging teachers to become better talent scouts and to apply enrichment techniques to regular classroom situations. The use of enrichment clusters is the only major structural change in school organization that this model requires.

3. The Continuum of Special Services

A broad range of special services is the third school structure that is targeted by the model. Although the enrichment clusters and the SEM-based modifications of the regular curriculum provide a broad range of services to meet individual needs, a program for total talent development still requires supplementary services that challenge young people who are capable of working at the highest levels of their special interest areas. These services, which cannot ordinarily be provided in enrichment clusters or the regular curriculum, typically include: individual or small group counseling, direct assistance in facilitating advanced level work, arranging for mentorships with faculty members or community persons, and making other types of connections between students and out-of-school persons, resources, and agencies. Direct assistance also involves setting up and promoting student, faculty and parental involvement in special programs such as Future Problem Solving, Odyssey of the Mind, the Model United Nations program, and state and national essay, mathematics, and history contests. Another type of direct assistance consists of arranging out-of-school involvement for individual students in summer programs, on-campus courses, special schools, theatrical groups, scientific expeditions, and apprenticeships at places where advanced level learning opportunities are available. Provision of these services is one of the responsibilities of the schoolwide enrichment teaching specialist or an enrichment team of teachers and parents who work together to provide various options for advanced learning.

The Total Talent Portfolio

The case study of Elaine presented above is an example of the approach we are taking in reconfiguring the Schoolwide Enrichment Model. Our purpose in reconfiguring the model is not to counteract or circumvent national trends, but rather to offer some solutions for achieving equity and excellence that are based on know-how that has emerged over the years on enrichment learning and teaching. The basic purpose of these new developments is twofold. First, we are attempting to provide schools with a systematic plan to implement and/or maintain commitments to the development of high levels of talent in young people, regardless of the direction that a school might take so far as its reform agenda is concerned. Second, we want to do everything possible to insure that there is a viable and exciting role within the school for specially trained persons who have strong backgrounds in enrichment learning and teaching. Although we have made some changes in the role that G/T teachers traditionally have played, a major part of their role will remain focused on direct services to students like Elaine who are targeted because of particular behavioral potential(s). But our approach to targeting has

been expanded, and accordingly, we have developed procedures for examining the multiple talent potentials of a broader segment of the entire school population. To achieve this goal, we recommend the use of some existing SEM components with all students. These components include the *Interest-A-Lyzer* (Renzulli, 1977b), performance based assessment, learning styles assessment, and the preparation of a Total Talent Portfolio that is based on the factors presented in Figure 1. This expanded approach to identifying talent potentials is essential if we are to make genuine efforts to include more minorities and other traditionally overlooked students in a plan for *total* talent development.

This approach is consistent with the more flexible conception of *developing* gifts and talents that has been a cornerstone of our work and our concerns for promoting more equity in special programs. It also draws upon some of the new work that has emerged such as Gardner's theory of multiple intelligences. We also recommend and suggest procedures for the use of more thinking skills activities and general enrichment in the regular classroom. In the reconfigured model, the role of the G/T teacher, whom we prefer to call the *schoolwide enrichment teaching specialist*, will consist of both direct services to any student engaged in "high end" learning (e.g., Type III Enrichment, mentorships, advanced Type II mini-courses,

Figure 2

Dimensions of the Total Talent Portfolio

Joseph S. Renzulli

Abilities	Interests	Style Preferences			
Maximum Performance Indicators	**Interest Areas**	**Instructional Styles Preferences**	**Learning Environment Preferences**	**Thinking Styles Preferences**	**Product Styles/Formats Preferences**
Standardized Tests Teacher-Made Tests Course Grades Teacher Ratings Written Responses Oral Response Self-Selected Products Artistic Products Musical Products Level of Participation Degree of Interaction with Others *Ref: General Tests and Measurements Literature*	Fine Arts Crafts Literature History Math/Logic Physical Sciences Life Sciences Politics/Judicial system Athletics/Recreation Marketing/Business Drama/Dance Musical Performance Musical Composition Management/Business Photography Film/Video Computers Other (Specify) *Ref: Renzulli, 1977b*	Recitation & Drill Peer Tutoring Lecture Lecture/Discussion Discussion Guided Independent Study * Learning /Interest Center Simulation, Role Playing, Dramatization, Guided Fantasy Learning Games Replicative Reports or Projects* Investigative Reports or Projects* Unguided Independent Study* Internship* Apprenticeship* *With or without a mentor *Ref: Renzulli & Smith, 1978*	*Inter/Intra Personal* •Self-Oriented •Peer-Oriented •Adult-Oriented •Combined *Physical* •Sound •Heat •Light •Design •Mobility •Time of Day •Food Intake •Seating *Ref: Gardner, 1983; Dunn, Dunn, & Price, 1975*	Analytic (School Smart) Synthetic/Creative (Creative, Inventive) Practical/Contextual (Street Smart) Legislative Executive Judicial *Ref: Sternberg, 1984, 1988, 1991*	Written Oral Manipulative Discussion Display Dramatization Artistic Graphic Commercial Service *Ref: Renzulli & Reis, 1985*

out-of-school experiences, etc.) and leadership activities that will infuse the know-how of enrichment learning and teaching techniques into the overall school program. A part of our work in facilitating this process is the preparation of categorical data bases that list a broad array of thinking skills activities and enrichment materials, as well as other data bases on academic competitions, publishing opportunities for young people, methodological (How-To) resource books and materials, summer programs, visitation sites, teleconferences, and proven staff development materials.[2] We have always argued that a large amount of gifted program activities should be made available for all students, and that SEM should serve as a vehicle for sharing the know-how of enrichment learning and teaching with the entire school. The reconfigured model will push this concept even further by enlarging the role of the Schoolwide Enrichment Team and developing genuine partnerships between SEM specialists and teachers and administrators. We still believe, however, that direct services in the form of high level follow-up and appropriate referrals to advanced resources and services are a "life line" for under challenged students with high potentials. For this reason, we will continue to advocate enrichment specialist positions as well as greater use of talent development techniques by the general faculty.

> School improvement must begin by placing the act of learning at the center of the change process.

The essence of our new work is the application of SEM know-how to the overall process of school improvement, and the development of some additional know-how that addresses factors related to increasing the challenge level for all students. For example, Curriculum Compacting is a "damage control" process that has been effectively used for high achieving students who are under challenged by the regular curriculum. But a large amount of research has shown that dumbed down textbooks and a focus on minimum outcome based competencies have lowered the achievement levels of large numbers of the school population. Experience has shown that the billions of dollars spent on compensatory drill and practice approaches to remediation have produced negligible results for disadvantaged students. We need to apply some of our proven techniques for compacting and enrichment to the entire curriculum, and we must replace excessive drill and practice with advanced, in-depth content and thinking skills activities for all students. Accordingly, we have identified techniques and staff development procedures for a more proactive approach to curricular modification which will provide guidelines for enrichment teams that want to surgically remove excess practice material from unchallenging textbooks. It is our hope that experienced G/T teachers who have familiarity with compacting and staff development will provide the technical know-how and leadership to implement this process.

Where Are We Going With SEM?

Three considerations are guiding our work as we go about the task of reconfiguring the Schoolwide Enrichment Model: the central role that the act of learning should play in the process of overall school improvement, the importance of making better use of time, and the need for a systematic approach to school change procedures.

Focus on the Act of Learning

School improvement must begin by placing the *act of learning* at the center of the change process. Organizational and administrative structures such as site based management, school choice, ungraded classes, parent involvement, and extended school days are important considerations, but they do not address *directly* the crucial question of how we can improve the act of learning. An act of learning takes place when three major components interact with one another in such a way as to produce the intellectual or artistic equivalent of spontaneous combustion. These three components are a learner, a teacher, and the material to be learned (i.e., curriculum). Each of these three components, in turn, has its own important subcomponents. For example, when considering the learner we must take into consideration: (1) the abilities and present level of the learner in a

[2] *These data bases and related program development activities will become part of a Schoolwide Enrichment Model Network (SEMNET) that is available to interested persons on a subscription basis. Please write to the author for information about how to gain access to the network.*

particular area of study, (2) the learner's interest in the topic and the ways in which we can enhance present interests or develop new interest, and (3) the preferred styles of learning that will improve the learner's motivation to pursue the material that is being studied.

The Importance of Time

Although it would be interesting to speculate about why schools have changed so little over the centuries, at least part of the reason has been our unwillingness to examine critically the issue of time. At some point in history between the time that Socrates met with young people in the marketplace in Athens and the advent of formal schools, the complexities of educating large groups of students gave rise to a formal organizational pattern that has come to be known as "the schedule." The arrival of textbooks with their ramifications for "coverage," and eventually, state regulations requiring prescribed amounts of time for various subjects further locked the school day and week into a formula for orderliness that has remained virtually unchanged since at least the turn of the century. If the ways in which we currently use school time were producing remarkably positive or even adequate results, there might be an argument for maintaining the traditional schedule. But such is not the case.

Although it is acknowledged that schools without schedules would probably be chaotic, the almost universal pattern of school organization that has emerged over the years has contributed to our inability to make even the smallest changes in the overall process of learning. This universal pattern is well known to educators and lay persons alike. The "major" subject matter areas (Reading, Mathematics, Language Arts, and Social Studies) are taught on a regular basis, five days per week. Other subjects (sometimes called "the specials") such as Science, Music, Art, and Physical Education are taught once or twice a week. So accustomed have we become to the rigidity of this schedule that even the slightest hint about possible variations is met with a storm of protest from administrators and teachers. "We don't have time *now* to cover the regular curriculum." "How will we fit in the specials?" "They keep adding new things [Drug Education, Sex Education, etc.] for us to cover." Our uncontested acceptance of the elementary and secondary school schedule causes us to lose sight of the fact that at the college level, where material is ordinarily more advanced and demanding, we routinely drop from a five meeting per week schedule to a three day (and sometimes even two day) per week schedule of class meetings. And our adherence to the more-time-is-better argument fails to take into account research that shows quite the opposite. For example, international comparison studies report that 8 of the 11 nations that surpass U. S. achievement levels in mathematics spend less time on math instruction than do American schools (Jaeger, 1992).

Some of the current reform proposals have indeed recommended changes in the schedule, but most of these proposals suggest *extending* the school day and year. These recommendations ignore the fact that extending school time without primary attention to the *quality* of learning will only increase the number of students who are bored to the point of refusing to learn what is already perceived to be irrelevant material taught by pedantic methods. These methods place primary emphasis on the mostly needless repetition of vast amounts of material that has already been covered. Numerous commentaries on textbooks have summarized research studies about the repetitiveness of a widely acknowledged, "dumbed down" curriculum in our schools. It is this research that has given rise to procedures in the Schoolwide Enrichment Model about specific ways for making modest alterations in the school schedule. The purpose of these alternative options for scheduling is to guarantee that at least some time will be available in each school week during which enrichment learning and teaching will take place. It is further argued that participation in these types of learning situations will provide teachers with experiences that are more valuable to their overall professional development than the thousands of hours they typically spend in traditional educational workshops. Our experience has shown that a small amount of time devoted to learning situations that focus on non-structured enrichment learning and teaching, and small amounts of time devoted to analyzing the circumstances and impact of these situations, has a spill-over effect on all teaching.

A Gentle and Evolutionary (But Realistic) Approach to School Change

The approach to school improvement being recommended in this model is realistic in the sense that it focuses on those aspects of learning and development over which the schools have the most influence, and therefore

the highest probability of achieving success. Schools are being bombarded with proposals for change. These proposals range from total, "systemic reform" to tinkering with bits and pieces of specific subjects and teaching methods. Oftentimes the proposals are little more than lists of intended goals or outcomes, but limited direction is provided about how these outcomes can be achieved; and even less information is provided about the effectiveness of recommended practices in a broad range of field test sites. Even worse are the mixed messages that policy makers and regulators are beaming at schools at an unprecedented rate, messages that are often incompatible with one another. One state, for example, mandated a core curriculum for students, but then evaluated teachers on the basis of generic teaching skills that had nothing to do with the curriculum. Schools are encouraged to raise their standards, and advocates of site-based management encourage teachers to become more active in curriculum development. But these same schools are rated on the basis of test scores tied to lists of state specified, outcome based competencies. A recent study (Madaus, 1992) showed that the most widely used tests measure low level skills and knowledge, and that teachers are under pressure to emphasize this kind of material because it will show up on the tests. The study also reported that teachers and administrators felt the tests forced them to compromise their ideals about good teaching.

In spite of this gloomy scenario, we believe that school improvement can be initiated and built upon through gentle and evolutionary strategies for change. These strategies must first and foremost concentrate on the act of learning as represented by the interactions that take place between and among learners, teachers, and the curriculum. In the early stages of the change process, these strategies should make minimal but specific suggestions for change in existing schedules, textbook usage, and curricular conventions. And these strategies should be based on practices that have already demonstrated favorable results in places where they have been used for reasonable periods of time and with groups from varying ethnic and economic backgrounds. We also believe that the individual school building is the unit-of-change for addressing school improvement, and that effective and lasting change can only occur when it is initiated, nurtured, and monitored from within the school itself. Outside-of-school regulations and remedies have seldom changed the daily behaviors of students and teachers or dealt effectively with solutions to inside-of-school problems (Barth, 1990, pp. 11-15). A simple but sincere waiver of top-down regulations, a plan that involves consensus and shared decision making on the parts of administrators, parents, and teachers, and incentives for specific contributions to the change process are the starting points and the only "big decisions" policy makers need to make in order to initiate a gentle and evolutionary school improvement process.

The change process recommended in this model begins with an examination of the major factors affecting the quality of learning in a school. These factors exist along a continuum of internal (to the school) to external, and each factor is interdependent with the others. Thus, for example, an internal factor such as the building principal may be externally influenced if the principal is assigned by central administration; and the curriculum may be externally influenced by state regulations or district-wide textbook adoption policies. All of these factors have three salient characteristics. First, they are always present, and regardless of micro or macro change initiatives, they always will be present! Second, each factor exists along a continuum of negative to positive influence on the quality of learning. Third, each factor is almost always going through a process of change, for better or worse. Our goal in the Schoolwide Enrichment Model is not to replace these essential factors, but rather to apply the strategies and services that define the model to the improvement of the respective factors. We view this process as a "cross-cut" approach to school improvement, and the main targets of the change process are those factors that have a direct bearing on the process of learning. And, as has always been the case with the SEM, the reconfigured model is systematic, inexpensive to implement, and practical in a common-sense-sort of-way that makes it appealing to both professionals and lay persons.

In my mind's eye, I view the automobile as a metaphor for our reconfigured SEM model. The school is the automobile (hopefully a Porsche), and the principal is the driver (hopefully bold and daring like Mario Andretti.) The faculty is the engine, loaded with power and constantly being tuned-up to make it more efficient and effective. Members of the Schoolwide Enrichment Team are the spark plugs, igniting the energy with above-and-beyond-the-call-of-duty activities. And the SEM specialist is the

ignition and the distributor, initiating new developments and directing the flow of energy to appropriate places. We have learned a great deal about enrichment learning and teaching during the several years that we have trained personnel and experimented with various components of the model. The atmosphere is ripe for a broader application of the strategies and techniques that have served us well in special programs, and I invite you to join us in this new effort to make all schools laboratories for talent development. I also hope that you will share these thoughts with your school and district leaders so that they will consider supporting your efforts to promote superlative learning in all students.

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See page 39.

The Development of Academic Talent

by Joyce VanTassel-Baska

What do we know about the development of academic talent by studying adults who have been academically prolific and proficient? We know that key influences, both external and internal, have brought them to high levels of accomplishment. Bloom (1985), for example, has chronicled the lives of 35 eminent individuals, including primarily those successful in academic areas and found the importance of several variables, initially a nurturing and supportive family, the right teacher at the right time, opportunity to fall in love with a talent area, and competition after the age of ten in order to develop to the appropriate level standard in the talent field. Feldman (1986) views talent development from the prospective angle of prodigies and sees other processes at work, notably early exposure and opportunity to develop in a given field that is socially accepted and available, a support network including parents, peers, teachers, and mentors that encourage the prodigy in the talent area, and an outlet for the talent through publication, performance, or exhibition. Moreover, the internal characteristics of commitment to hard work, perseverance, and the need to create for both prodigies and successful adults form a valuable part of the talent development puzzle. How people develop talent has often then been credited to a combination of influences related to home, schooling and special training, and personality variables that facilitate the process (VanTassel-Baska and Olszewski-Kubilius, 1989).

The development of academic talent as it is explored through a programmatic lens takes on another orientation, primarily one that seeks to develop appropriate programs based on an individual's talent potential demonstrated at a given period of development. Such programs in our schools at elementary, secondary, and post secondary levels have been developed using two general approaches. One approach has been to identify talent and provide "optimal match" experiences to nurture it through multiple means that include advanced curriculum, placement in university-based settings, and mentoring. This approach has been institutionalized nationally through the academic talent search model, developed by Stanley and his colleagues in the middle 1970's.

The second approach to talent development lies in providing curriculum for all students at appropriate levels of challenge so that talent may be discerned and encouraged from a broader range of students in the classroom. This idea, initially advocated by Passow (1955), has been recently popularized by Gardner (1984) and others promoting the application of his multiple intelligences theory in regular classrooms. Another manifestation of this approach has been explored through two recent national curriculum projects in science and language arts, developed to set curriculum standards at world class levels and to demonstrate alignment with the new curriculum development paradigm (VanTassel-Baska, in press). A description of both the talent search approach and the classroom-based curriculum approach used in these national projects follows with a brief comparison of the benefits of each.

Julian Stanley's founding of the Study of Mathematically Precocious Youth (SMPY) in 1971 and the subsequent development of the national talent searches signaled a key strategy for talent development in the areas of identification, programming, and curriculum and instruction (Stanley, Keating, & Fox, 1974).

Identification

The development of the talent search identification model itself was the catalyst for the approach. The simple but elegant idea was to administer a more difficult test, one normed on older children, to a younger but highly able group (top 2 to 5% on standardized achievement tests, such as the Iowa Test of Basic Skills), specifically, the College Board Scholastic Aptitude Test (SAT), to find precocious seventh/eighth grade students. The efficiency of this approach is now legendary. More than 140,000 students at 6th, 7th, and 8th grade levels are annually tested through this procedure, both nationally and internationally, through university-based programs at Hopkins, Duke, Northwestern, Arizona State, Iowa State, and Denver universities as well as elsewhere. Talent searches for 5th graders and even younger students using alternative measures off-level currently identify over 10,000 students annually as well.

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Through this process, information becomes available for talent to be differentiated by degree and type (verbal, math, or both).

More specifically, what is a talent search? The talent search model employs a two- step testing protocol. At step one, all students who are scoring in the top few percentiles on their in-grade standardized achievement test battery, in mathematical or verbal areas or overall, are searched for. At step two, this academically able population is administered the SAT, a test designed for above average high school students. This results in a wide dispersion of scores on the SAT, such that there is virtually no ceiling effect for the talented youth tested. Consequently, educators can better discern the potential of these junior high age students at this critical stage of development in key academic areas (verbal and math). Furthermore, because these younger students usually have not had advanced course work in mathematics or the verbal areas, the scores are more representative of their reasoning power than achievement (Benbow, 1991; Benbow & Stanley, 1983).

What important implications does aptitude testing using the SAT have for gifted education identification policies? They are manifold. The identification principles in the talent search model have been employed primarily within school districts to identify those students most in need of a differentiated program, namely the highly gifted. However two specific principles embodied in the talent search model have had a powerful effect on local gifted education practice.

One of these is the principle of above-level testing (Stanley, 1990). The talent search model has demonstrated that true potential for specific academic work in mathematics and verbal areas can be discerned better by administering an above-level test, standardized on older populations, than by arbitrarily using cutoff points within a narrow band of ability on in-grade measures, calling those above the cut-off "gifted" and those below "not gifted." Because scores in the top range are difficult to interpret and cannot be differentiated, such cutoffs at the highest ranged produced many false positives and false negatives. Most serious in this regard were the false negatives—the many students who could have performed well on a second-level testing have been eliminated from further consideration through a faulty screening mechanism. That is, they were prevented from showing their true capabilities on a more difficult measure. Local districts now work to apply this principle of above-level testing in their identification practices to avoid such problems.

A second principle of the talent search identification model that has had significant impact on local educational practice is the testing of specific areas of aptitude rather than tapping only global intelligence. Indeed, in support of this practice, current theoretical work in gifted education suggests a conception of multiple intelligences (Gardner, 1984) displayed in domain-specific contexts (Feldman, 1980). Moreover, predictive validity studies have demonstrated the effectiveness of the SAT in finding students who can profit from advanced course work in specific aptitude areas (Benbow, 1992; Keating, 1976; Stanley & Benbow, 1981; VanTassel-Baska, 1983).

But even if theory and research were not supportive of SMPY's innovations in regards to identification, the talent search approach still represents a very practical course for local districts who program for gifted learners within a limited time frame, and therefore, frequently are not able to meet all of the educational needs of this population. Furthermore, targeting individual aptitude areas has political benefits—it allows for a larger number of students to be identified and served, and thereby dispels the notion that the gifted program is serving only high IQ students. Even diversification of program options based on aptitude differences is possible in higher socio-economic suburban school districts where many bright students may be found. This allows for differentiated programming even among the gifted. The benefits can be made equally apparent for the other end of the SES continuum. Approximately 14% of talent search students identified annually through either mathematical or verbal scores in the Midwest, for example, are from low SES backgrounds (VanTassel-Baska & Chepko-Sade, 1985).

Finally, the talent search provides a systematic approach to identification that recognized four distinct aspects of the process: screening, identification, program planning, and validation of selection criteria. This systematic work has positively impacted identification policy, at state and local levels at all stages of student development.

Programming

The talent search concept also has deeply affected our ideas about appropriate programming for gifted and talented learners. If students are verbally able, they are best nurtured

in that capacity. That is, they need high-powered verbal programs that test student limits. Conversely, if students are mathematically precocious, a program should be geared to address that strength directly. The true beauty of aptitude testing, such as through the talent search, is that it provides administrators with important diagnostic information for curriculum planning. One could even argue that a cursory content analysis of the test would yield curricular inferences that might be translated into classroom instruction. Based on the type of items contained in the SAT-V, for example, one could begin to develop a strong verbal arts curriculum that focused on critical reading, deductive reasoning, vocabulary development, and use of analogies, all valid curriculum emphases within a rigorous English program.

The summer programs associated with each talent search have demonstrated the effectiveness of matching talent systematically to a core curriculum offering. In such programs, students with high math talent, for example, are given the opportunity to choose from developmentally appropriate course work in math and the sciences. Students have consistently performed very well in such course work which usually comprises three weeks of instruction totalling 75-99 hours of classroom time; at the end of the course they have scored at or above the mean for college-bound high school seniors on the College Board Achievement Test in the appropriate subject area (Stanley & Stanley, 1986). Data from three consecutive years of the Northwestern University summer programs illustrate well the utility of this "matching" phenomenon. In both aptitude and achievement testing situations, junior high age students, with three weeks of intensive instruction, consistently have performed at levels comparable to students four to six years older. (VanTassel-Baska & Strykowski, 1986).

Beyond issues of optimal match by content area lie other important considerations for programming alternatives. The talent search model has demonstrated two important general programming principles regarding the range of abilities tapped through SAT testing. First, the more gifted the student, the more there is a need for intensification of services such as the compressed summer programs, correspondence study or mentorships. Second, the more gifted the student, the more the need for the extension of services—providing an array of options that are simultaneously accelerated, enriched, and personalized. Thus, treatment of students by level of aptitude has provided important insights for program planning in gifted education.

If there is but one approach to programming that can be considered to be the essence of the talent search model, it is acceleration. Indeed, it might even be said that SMPY singlehandedly revived this time-honored practice. In the 1970's acceleration was rarely used, now it is used more widely but still not as much as might be desirable.

Reviews of the literature on acceleration have appeared with some regularity over the last 25 years (Benbow, 1991; Daurio, 1979; Gallagher, 1969; Kulik & Kulik, 1984; Reynolds, Birch & Tuseth, 1962; VanTassel-Baska, 1986), and each review has carefully noted the overall positive impacts of acceleration on gifted individuals at various stages in the life span. Recent studies, moreover, continue to show positive results in cognitive development from acceleration and no negative effects in social emotional development. For example, researchers have reported no harmful effects of various forms of acceleration, including grade skipping and taking of advanced courses (Brody & Benbow, 1987; Swiatek & Benbow, 1991). Accelerated students generally earn more overall honors and attend more prestigious colleges, with the best predictor of college achievement being early and continued taking Advanced Placement (AP) courses. The latter suggest that advanced and challenging work on an on-going basis is a powerful instigator to achievement at later levels.

Curriculum and Instruction

The talent search concept has done more than affect identification, programming, and accelerative practices, however. It also has had an important impact on practices in the area of curriculum and instruction. The renewed emphasis on accelerating traditional content, was accompanied by a resurgence of interest in subjects that had been dropped from school curricula or disregarded in favor of more modern options. Such subjects were the classical languages, such as Latin and Greek, philosophy, German, and rhetoric. There also developed an interest in more rigorous aspects of accepted courses, such as in English, literary analysis, and expository writing, rather than emphasis on more creative forms of expression. The resurgence of such curriculum options has created new appreciation for serious study of such subjects by students even prior to high school.

Furthermore, use of diagnostic-prescriptive approaches to ensure instructional progress at an appropriate rate became a staple of well-run, fast paced programs for highly talented students. Also heralded as a technique to counter remediation and loss of motivation of the gifted, these procedures became fundamental to modifying instruction for them. The teachers of the resulting fast-paced classes became facilitators of small group and individual learning, as well as the providers of direct instruction. Frequently instruction in as many as three courses in mathematics, for example, would be taking place in the same classroom—thus highlighting the individualized nature of the instructional process and the wide range of abilities even among the highly gifted.

Finally, the talent search approach encourages the development of curriculum in the core disciplines. Advanced placement coursework was restored as a positive offering for the gifted, which provided many key features of excellent curriculum; many school-based programs for the gifted began to modify traditional content rather than develop curriculum outside of its boundaries.

Impact on Higher Education

The talent search concept has also impacted greatly on the landscape of higher education as well. Six university centers have developed at key institutions as a direct result of the model. Each of these centers provides a broad-based set of services: from the administration of SAT testing for thousands of junior high school age students, to the offering of precollegiate learner programs during the academic year and in the summer, and to research and development initiatives that provide a greater base of understanding gifted students, their families, and the institutions with which they interact. Beyond these centers, a proliferation of precollegiate learner programs have developed at hundreds of other campuses, sponsored as a result of the talent search model. In the Midwest, for example, when the talent search began, there were only a handful of university-based programs for these students. Within one year, there were 24; and by 1987 there were 66. Today there are approximately 80 institutions of higher education providing programming in the eight-state region served by the Midwest Talent Search.

Clearly there is an element of self interest for these institutions; the recruitment of high level talent. However, the direct benefits to students as a result of these programs is enormous. For many it becomes a way: 1) to earn advanced high school and even college credit in an economical manner, 2) to associate for the first time with an equally able peer group, 3) to develop the "habits of mind" associated with serious study on a college campus, and 4) to gain a sense of academic competence through receiving a worthy challenge to learn more difficult material. Equally important are the personal gains in the area of social and emotional development that these students experience.

Curriculum Based Models

The two national curriculum projects which were developed with an understanding of appropriate level curriculum for gifted students are also being used with a broader range of students and illustrate the more curriculum-based approach to talent development. These projects also are based on key features of the new curriculum reform model. Following are some of the features of this model.

Curriculum must be meaning-oriented for the learner. It must emphasize depth over breadth, concepts over fact, and be grounded in real world issues and problems that students of today care about or need to care about. For instance, what role does scientific investigation play in deciding what to do about an overturned truck on the highway carrying dangerous chemicals? Such everyday occurrences become the basis for meaningful science instruction.

Curriculum must engage students in thinking. Such a curriculum must treat thinking skills as integral to all content areas and provide students opportunities to demonstrate their understanding of these areas through strategies like concept mapping and using higher order thinking skills within existing subject matter.

Curriculum must stress intra and inter disciplinary connections. There exists a need to break down the boundaries between areas of learning so that students can participate in real world learning as adults do. One way to do this is to use overarching concepts as the organizer for making connections. Thus the concept of systems in science can have applicability to cells, ecology, and machines as well as to cities and economics.

Curriculum must teach metacognition. Not only do students need to learn certain ideas about the world, they also need to understand how to think about their learning processes. By being aware of planning, monitoring, and as-

sessing their own learning, students can enhance their use of time, resources, and energy to focus on efficient and effective study habits.

Curriculum must cultivate student habits of mind. Education must develop students who think like professionals in various fields and exhibit their predispositions and attitudes as well. Fostering in students the curiosity of the scientist, the commitment of the engineer, and the creativity of the writer is a part of world class education.

Curriculum must be rooted in multiculturalism/globalism. It must recognize that America is not the center of the universe, that other countries and cultures have made significant contributions to the progress of humankind in many areas. Moreover, curriculum should reflect in an equitable way the contributions of all minority groups comprising America today through activities, strategies, and materials.

Curriculum must promote active learning and problem-solving. As such, curriculum puts students in charge of their own learning—finding out what they know, what they don't know, and what they need to know. The role of the teacher in such a model is as metacognitive coach, assisting the learner in structuring the problem, suggesting resources to explore, and encouraging the learner to continue the quest.

Curriculum must be technology-relevant. It should actively encourage students to use various new technologies as tools for the learning process. From doing library research via CD-Rom to composing at the word processor, students need to see the utility in accessing technology. Moreover, the proliferation of software allows any subject to be enhanced while E-mail encourages student communication regularly.

Curriculum must demonstrate learner outcomes of significance. As a result of student learning in any domain, it is reasonable to expect evidence of what has been learned. In order to assess adequately that, appropriate outcomes need to be identified at the beginning of a learning segment. These outcomes must be broad-based, conceptual, and relevant to performance standards.

Curriculum must be assessed authentically. We must test students on what we teach them so that our assessment results can be interpreted meaningfully in the educational context. Authentic approaches currently recommended include performance assessment, portfolios, enhanced multiple choice questions, and open-ended questions, all with an eye to tapping into what students have learned as a direct result of teaching.

These principles of the new curriculum emphasis were incorporated into both the science and the language arts projects. Overall emphases of the projects, however, were to develop and articulate meaningful concepts, to develop a curriculum framework, and to develop and pilot test exemplary units of study.

The development of meaningful concepts

Each of the projects emphasized the importance of a key concept in the organization of curriculum activities. A series of concept papers that describe a number of broad, overarching, scientifically grounded concepts common to many branches of science were developed for the science project, for example. They were chosen with reference to the concepts selected by Rutherford and Ahlgren in *Science for All Americans* (1989), those adopted by the California State Board of Education (1990), and those selected by Judson for his book *Search for Solutions* (1980). Additional criteria applied to selecting the concepts in this project were: 1) ease of applicability to all science areas, 2) number of valid connections to non-science domains of inquiry, and 3) concepts able to demonstrate content manifestations at the unit level of analysis.

Of all the concepts referred to in other works, six were chosen for explication in the project: scale, models, change, systems, evolution, and reductionism. In addition, during the course of the project, a general description of the scientific process that would be useful for teachers to follow was developed along with a description of useful ways to incorporate laboratory work for high ability learners. Finally, an applications paper containing suggestions for implementation was developed for teacher use in teaching the specific scientific concepts.

> Curriculum ...must recognize that America is not the center of the universe, that other countries and cultures have made significant contributions to the progress of humankind in many areas

In the National Language Arts Curriculum Project, the papers developed focused on the key strands of learning in the language arts, specifically: a) language, b) writing, c) oral

communication, d) literacy, e) a general paper on developing curriculum in the language arts, and f) a paper on the concept of change which was used as a conceptual organizer for individual unit development.

The overall purpose of articulating specific concepts was to aid teachers in understanding the key components and generalizations that are critical to specific concepts or areas of learning as well as to see ways these concepts can be applied to high ability students' learning in the classroom. Moreover, by providing a rich bibliography of further readings on each concept, teachers were encouraged to engage in the first step of the curricular and instructional process: learning as much as possible about what they are expected to teach.

The development of a curriculum framework

In the K-8 science curriculum project, a framework was developed that selected the concept of "systems" and developed it systematically from generalizations to learner outcomes to content applications to interdisciplinary applications at the specific grade levels of K-2, 3-5, and 6-8. The framework provided an organizing structure for the development of teacher units around the concept of systems. Major generalizations made about systems were:

a. Systems have identifiable elements.
b. Systems have definable boundaries.
c. Most systems receive input in the form of material or information from outside their boundaries and generate output to the world outside their boundaries.
d. The interactions of a system's elements with each other and their response to input from outside the system combine to determine the overall nature and behavior of the system.

These generalizations were then translated into learner outcomes. An example of this process at grades 3-5 is:

Students will be able to:

- Analyze important interactions among system elements that give rise to overall system behavior.
- Describe input into the system and evaluate its effects.
- Describe output from the system and analyze its effects/contributions.
- Use elements, boundaries, input, output, and interactions to represent a system.
- Describe the interdependence of elements, boundaries, input, and output.
- Predict perturbations in others parts of the system when changes are made to a single system component.
- Students can predict first- and second-order consequences of modifying the system.
- Use knowledge of a system under study to analyze a new system.

The same process was followed to teach an understanding of scientific process. The elements of the scientific process were defined as:

a. Learn a great deal about your field.
b. Think of a good (interesting, important, and tractable) problem.
c. Decide which experiments/observations/calculations would contribute to a solution of the problem.
d. Perform the experiments/observations/calculations.
e. Decide whether the results really do contribute to a better understanding of the problem. If they don't, return to either step 2 (if you're very discouraged) or step 3. If they do, go to step 6.
f. Communicate your results to as many people as possible. If they're patentable, tell your lawyer before you tell anyone else, and write a patent application or two. Publish them in a scientific journal; go to conferences and talk about them; tell all of your friends.

This description of the scientific process was then translated into generic learner outcomes.

Students will be able to:

- Explore a scientific area.
- Identify meaningful problem for investigation
- State an hypothesis.
- Work through a preplanned experiment or demonstration or aid in the development of an experiment.
- Make appropriate observations.
- Create a simple graph or chart. Label diagrams appropriately.
- Record data in appropriate format
- Analyze experimental data such as data tables and graphs.
- Perform appropriate calculations by hand.
- Evaluate experiment results in light of the original problem.
- Make predictions about similar problems.
- Communicate using posters, oral communication, and brief lab reports.

In language arts, the curriculum framework was developed with a set of generalizations about "change" forming the basis for developing learner outcomes. Also fundamental

to the language arts curriculum framework was a set of process outcomes, derived from using a reasoning model to undergird all elements of the project to ensure higher order thinking (Paul, 1992). Specific content outcomes derived from the topics papers were developed for each of the four strands of the language arts. Thus the framework stressed concept, process, and content outcomes for high ability learners at K-8 levels.

The development of model units

A set of exemplary curriculum units were developed for primary, intermediate, and middle school levels in both science and language arts. These units were generated from each project's selected concept either of "systems" or "change." The units used the curriculum framework as a basis for development and were evaluated according to the project criteria for exemplary curriculum materials. A sample description of a unit from each project is shown in Figure 1 and 2. These highlights the relationship of the work of the unit to the concept under study and learner outcomes delineated in the curriculum frameworks.

Sample Science Unit

Small Ecosystems: Planet X

"Planet X" was developed to give second grade high ability students the opportunity to explore the concept of 'systems' through the particular study of a model ecosystem. This unit poses a problem for the students to resolve which will enable them to approach the ecosystem study through the eyes of apprentice scientists. In order to resolve the problem, students will have to build a model ecosystem and understand the global systems (weather, planetary) which are the bases for the model The problem gives the students a real issue of significance to solve which serves as a vehicle for student involvement and enables them to see the complexity of one system in relation to the systems it depends upon.

Figure 1

Sample Language Arts Unit

People and Change

"People and Change" was developed to give fifth grade high ability students the opportunity to explore the concept of change through the particular study of key pieces of literature in which characters change in significant ways as a result of internal and external events. The unit encourages students to explore poetry, short stories, and novels in their quest to understand character and cultural change. Reasoning skills are taught through literary analysis, writing persuasive essays, and language study. Research on an issue of significance illustrating the change process at work is also featured.

Figure 2

Comparison of Approaches

While it might be argued that one of these approaches is more appropriate than the other in certain educational contexts, it appears that each has a place in the process of talent development in schools. While the talent search approach ensures that already emergent high level talent can be identified and nurtured in specialized ways, the curriculum-based approach ensures that a broader range of students are not overlooked and have equal access to high-powered educational opportunities in a supportive context. If talent development approaches are embedded in all classroom curriculum as advocated by Gardner (1984), then a broader concept of talent becomes manifest in schooling while the talent search is limited to develop talent primarily in the traditional areas of aptitude. Developing new curriculum, however, is time-consuming, frequently idiosyncratic, and woefully lacking in evidence of effectiveness with learners. The talent search approach, on the other hand, offers an economical and efficient approach to nurturance through existing resources.

The talent search approach has amassed evidence of effectiveness over the past 15 years; newer curriculum-based approaches will need more time to demonstrate their worth, although impact studies are currently underway on new curriculum in both science and language arts. It is important to note that each of these approaches to talent development is geared to some different type and degree of talent. Students who profit from the talent search model already have demonstrated academic achievement at a high level; whereas, curriculum-based approaches target frequently overlooked learners through the use of motivating and engaging activities geared to capture their interest and hopefully expand their intellect. These activities may not be as advanced academically as those offered through talent search programs, yet they do represent a broader spectrum of academic enrichment.

Conclusion

In conclusion, academic talent development stands at a threshold of accommodating two strong approaches—one the traditional talent search model that finds and nurtures high level academic talent as early as fifth grade and the other a more curriculum-based approach that seeks to upgrade the level of curriculum for all learners and reveal latent talent in a variety of academic and non-academic areas. It is my contention that both of these models of talent development must be employed by schools to ensure that no student is overlooked or underserved in a particular area of talent. By including a combination of models, we move closer to that ideal.

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Art Teachers, Child Art, and Abilities: Implications for the Concept of High Abilities in the Visual Arts

by Gilbert Clark

Picture an artist in his or her studio, engrossed in thought, seriously committed to creating new art works, but "blocked"—unable to work—because the artist's highly valued agent, also his gallery director, has established several new conditions for a set of works they will commission. The artist, however, is troubled and unsure that the work can be done. The conditions the artist has been asked to impose while creating the commission are to:

(1) work without reference to any observed real world objects; recreate all images from memory,
(2) focus upon the expression of whatever transitory mood or feelings the artist experiences while working,
(3) move to new and untried media and invent the techniques to be used with each new work,
(4) create a unique, new, and different imagery in each new work in each new media; avoid any repetitions of subject matter or series of related images,
(5) create a completed work, ready for exhibition, each time he or she comes to the studio,
(6) studiously avoid criticism or critiques either by self or by anyone else,
(7) only observe the works of other artists who are working under the same conditions, in the same spaces, and
(8) studiously avoid contact with historical or contemporary imagery by other artists that may bear some relationship to this commission and the artist's previous work.

School Art Style

Readers may sympathize with this artist's 'block' and understand his or her inability to move ahead and create under this set of imposed conditions. The portrayal, however, is paralleled daily in art classes, particularly in elementary schools. Imagine the teacher in the art room as the "agent and gallery director" and the elementary classroom as the "artist's studio." The portrayal is a caricature, but it describes rules and conditions that teachers set for most elementary and many secondary students working in art classrooms all across the country; the outcomes are predictable and self-fulfilling. In the name of achieving 'original' child art or creative self-expression outcomes, most teachers have been taught in art education methods classes to set these conditions and actually to criticize learning experiences in art that differ from them.

Being asked to create under such conditions is detrimental to the expressive abilities, or to other growth in learning about the visual arts, of most students and particularly to those of high ability students in the visual arts. Like highly talented students generally, high ability students in the visual arts are inherently precocious in that they learn more and faster than others, can deal with abstractions more quickly than others, consciously understand generalizations with fewer encounters or examples than others require, and have developed advanced abilities that facilitate their achievements in the visual or performing arts. Precocious students in the visual arts often demonstrate unusual perceptivity in that they are more visually sensitive and observant than others. Their advanced awareness of, and sensitivity to, issues that can be translated into meaningful visual images, as well as their advanced sense of design and balance, color usage, and composition, are abilities they bring to creating meaningful works of art. They create more meaningful art work than other students because working with art media is important to them and they have a sense of the emotive and communicative power of the visual arts. These abilities, skills, and understandings are not, however, simply the result of physical maturation. Like most human behaviors, these are learned and, more specifically, clearly are the result of instruction or teaching.

Child Art and Creative Self-expression

The concepts of 'child art' and 'creative self-expression' and their promotion at all levels of education during the 1950's, 1960's, and 1970's, have been responsible for setting rules and conditions for the making of art in classrooms that has been antithetical to meeting the needs of high ability students in the visual arts. This

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is because, in large measure, proponents of child art and creative self-expression have encouraged the retention of naive childishness or a total lack of striving for sophistication in students' art production as a major goal of "art education." One historical textbook, for example, warns art teachers to move children to new and untried media if they show any signs of mastery or real control of their work!

Whether for psychological or misguided aesthetic reasons, including veneration of obvious childishness, teachers who always manipulate school art experiences to encourage childish imagery or naivete actually are teaching a formula for making art as undesirable as those of the French or British Academies, noted for their sameness, that artists revolted against near the turn of the century. The products of child art centered teaching are remarkably similar across the country because the rules and conditions that guide its making, as in the art academies, are the same.

In music education, there are no similar concepts or sets of rules. Children who study music, particularly those who may be identified as highly talented, are not rewarded for remaining childish or for avoiding adult models and critics. Quite the opposite; music students are taught, in carefully controlled sequences, basic knowledge, skills, and techniques that continually are extended as the student masters increasingly more difficult and sophisticated musical literature. There is a constant interplay between attainment of requisite skills, the increased difficulty of that to be learned, and the joy of shared performances at each level attained. A precocious child in music is a student who has learned to perform with adult-like skills and abilities at an early age. Music students are not held back at childish, immature, or naive levels as are students in the visual arts. To do so today is to violate all we know about the abilities and characteristics of high ability students in the visual arts.

David Henry Feldman

David Henry Feldman has focused his attention on the study of child prodigies for a number of years and has revealed major insights about their learning that raise serious questions about common practices found in art classes, including classes for high ability students in the visual arts. Feldman claims, based on many years of research studying exceptionally high ability students, that there are several ideas about instruction and a number of conditions for learning that must be met in order for high ability students to learn what is required for sophisticated achievement. He is adamant in claiming that growth in mastery of any subject is achieved only as the result of directive, systematic, prolonged, and intentional **instruction**. Feldman has explained that stages of child development are:

(a) inherent in a specific discipline of knowledge, rather than in a child's mind or growth;
(b) continuous and process based, rather than trait based;
(c) the direct result of educational interventions, rather than simple maturation; and
(d) controlled by children's learning environments, rather than spontaneously generated.

Feldman has asserted that high ability students must work within a subject matter that clearly is organized in a structural hierarchy in order to be aware of their growth and in order for teachers to introduce and challenge increasingly more difficult levels of attainment. In addition, attainment of increasingly more sophisticated knowledge, skills, and understandings is predicated upon interactions with teachers or mentors who have clear understanding of the subject's organization as well as highly developed abilities to communicate and teach the appropriate content and learning experiences.

Necessary Conditions

One way to understand Feldman's explanation of what high ability students require is to imagine a student born into a relatively remote, rural community as, for example, Tipton, California. According to Feldman, if a child is born there, with all the inherent potential needed to become a world class sculptor, this potential probably cannot and will not be realized, simply because of the lack of **instructional** experiences and opportunities needed to shape the potential through the youth of the child. One requirement, exposure to the numerous possibilities expressed by great sculptors during the history of the world, would be difficult to meet. The likelihood of exposure to, and opportunities to use, major sculptural tools, media, and materials also would be remote. So, too, would be the requirement of contact and work experience with teachers and mentors able to guide the student into increasingly more difficult and challenging learning experiences as sculptural projects. Awareness of how sculptors have expressed common themes in three-dimensional media, and opportunities to work at advanced levels with a practicing sculptor as a mentor,

would be very difficult to obtain or provide in communities where these resources aren't commonly available.

The implications of the ideas presented in this paper and of Feldman's research and findings call for a complete redefinition of the "rules" or conditions students should work with in art classrooms, particularly for students identified as having advanced abilities in the visual arts. Rather than the stifling conditions described earlier, high ability visual arts students should deliberately be taught the knowledge, skills, and understandings they need in order to grow in their ability to interact with art objects and to make art. They also should be asked, allowed, and encouraged to:

(a) work with active reference to observed real world objects and create images from their observations,
(b) focus on the communication or expression of specific purposes and moods or feelings with appropriate imagery,
(c) work with familiar media, using appropriate techniques they have been taught for personal expression, as well as be taught new media and techniques as needed to expand expressive possibilities,
(d) create unique works as well as repetitions of subject matter and experiments with media as related images in a series of explorations of a theme,
(e) create completed works, ready for exhibition, only with the amount of time needed for the student's realization of his or her purposes,
(f) studiously seek criticism or critiques either by teachers, one's self, or by fellow students,
(g) actively seek awareness of, and be provided, the works of adult artists who are working with similar themes or problems, and
(h) actively seek contact with, and be provided with, historical and contemporary imagery by adult artists that may bear some relationship to the student's work

A Dream Deferred

I wish to soar across the sky
My wings outspread.
But someone said you cannot fly.
Your arms are useless in daring flight.
A dream deferred, a dream put out,
a shriveled green thing, no longer white.
No longer pure and alive in my mind.
Now I can't find it.
That dream went to hide.
It is as dry as a desert
So barren and bare.
There is simply
nothing there.

My dreams have been shattered
like a broken vase,
and little bits come up
and pierce my face.
Little bits that hurt me,
make my heart black.
My dream isn't there.
There is a lack.
I can't soar with an eagle,
crawl in the hills of the moon.
I know I won't fly.
At least, not soon.

Paul Nagel, 5th Grade
Acacia School
Fullerton, CA
Carol Copley, teacher

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Resolving Inequities:

Discovery and Development of Talents in Student Populations Traditionally Underrepresented in Gifted and Talented Programming

by Donna Rae Clasen

Resolving the issue of underrepresentation of certain groups of students in gifted and talented programs is critical for the field of gifted education. Until this issue is resolved, gifted programming will be labeled elitist and regarded as unfair, even inappropriate, by large groups of educators, parents, and policy makers. Further, the absence of representatives from all populations means the loss of vast pools of talent, for without discovery and nurturance, few students, regardless of their promise, will reach their potential.

Most frequently included among the underrepresented are the economically disadvantaged and those traditionally identified as minority: African-Americans, Hispanic-Americans and Native Americans (Baldwin, 1987; Richert, 1987). Concern for their underrepresentation in gifted programming is not new (Passow, 1972; Torrance, 1977), but the need to do a better job of addressing the needs of high ability minority and disadvantaged children becomes more and more pressing as these students appear in increasing numbers in the nation's schools, and the neglect of their talents becomes more apparent and problematic.

Five Barriers

Currently, at least five barriers prevent many minority and disadvantaged students from developing their talents and abilities.

1. *Socio-economic inequality.* Students from economically disadvantaged environments often have limited social and educational opportunities to explore and develop their capabilities. The result is that potential remains potential only.
2. *Educational history.* Many minority and economically disadvantaged students currently in school are the first generation of their family to have the opportunity for special programming and for post-secondary education. Support systems and role models for educational endeavors are absent.
3. *Educational achievement as a cultural issue.*. Academic achievement has often been viewed as a majority group value, and some students are rejected by peers for achieving in school since this is viewed as "selling out to whitey" (Fordham and Ogbu, 1986).
4. *Expectations.* In many instances teacher expectations for minority and disadvantaged students are low; opportunities and challenges which help students explore and expand abilities are missing (Strom, 1990).
5. *Conceptualization of giftedness.* Underrepresented students are frequently omitted from gifted programs because inclusion rests primarily on their performance on assessments which may not be culture-free or culture-fair.

Identification models and program options for minority and economically disadvantaged children with exceptional talents must take these five barriers into consideration. They are a major focus in Project STREAM, a program designed to identify and develop talents of high ability minority and economically disadvantaged students. The program is a collaborative effort among three Wisconsin universities and six school districts, including rural, mid-sized and urban schools.

Admission to STREAM is based on a variety of assessments: problem-solving and art tasks, leadership measures, achievement scores, grades. Teacher and peer nominations supplement the assessments. High scores on any one measure qualifies the student for STREAM since program offerings match abilities. Students are identified in sixth grade and remain in the program throughout middle and senior high school. Currently over 200 STREAM students ranging from grades 6- 12 are involved in one or more school-district or university-based programs designed to provide access to opportunities to develop potential. Simultaneously, through staff development and parent meetings, STREAM is working to remove the barriers obstructing proportionate representation in gifted programs by modifying the knowledge, skills, and attitudes of students, educators, and parents.

STREAM has six basic assumptions:

1. Talents and abilities are distributed equally without regard to gender, race ,or ethnicity.

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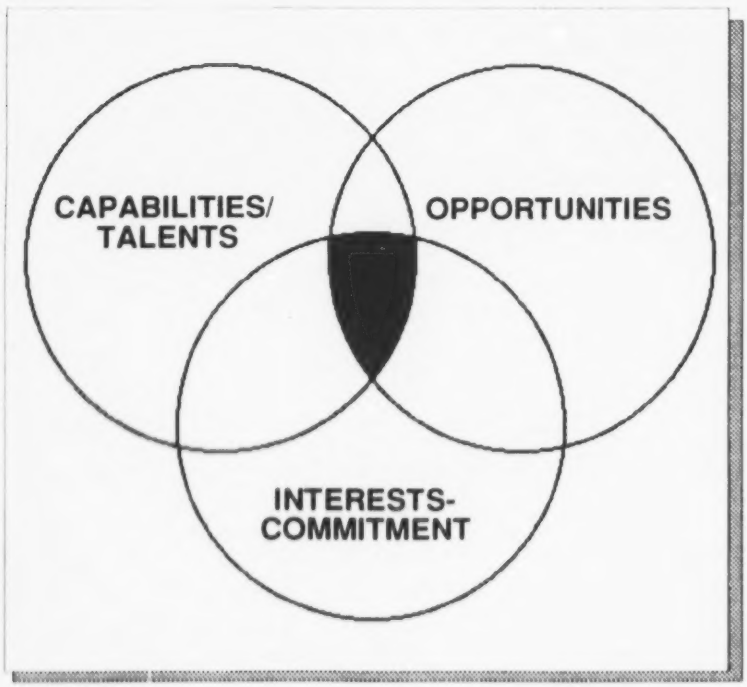
2. Multiple talents exist and can be identified.
3. Systematic and continuous attention to students and their talents is necessary.
4. Psychological components are as important as academic components in talent development.
5. Families must be involved in their children's education.
6. Universities need to link with minority and economically disadvantaged students, their teachers, and their parents when students are young.

From the STREAM Project, a tripart Talent Development Model has emerged. The model identifies three conditions which increase the likelihood that talent will be discovered and developed. It addresses the barriers to proportionate representation and has implications for both identification and programming.

Talent Development Model

The Talent Development Model suggests that three factors must be involved when considering talent development: (1) Capabilities/Talents, (2) interests (evolving into Commitment) and (3) Opportunity. It is the interaction among the three that will create the fertile field for the seeds of potential and will determine the level of ability development. (see Figure 1)

Figure 1



Capabilities/Talents

Talents appear in all humans, but some individuals have the capacity to achieve at superior levels of excellence and to a degree that is rare in society. These individuals are called gifted, talented and/or exceptional. In STREAM, we found that the label in and of itself may make a difference. Focus on the use of the words *talent* and *talent development* was helpful for three reasons: (1) In many instances both parents and students were unfamiliar or uncomfortable with the term gifted. Talent, however, resonated for them; they knew of many "talented" individuals. In addition, some students held skeptical views of "gifted" classes and were hesitant to affiliate with an identified gifted program; (2) Since talent is often regarded as more modifiable than a gift, focus on talent helped promote the program emphasis on potential rather than on demonstrated ability; (3) The STREAM concept of exceptional ability embraced the non-academic as well as the academic, and the concept of talent lends itself to both.

Talents first emerge as potential. By school age many children will be able to demonstrate potential quite clearly. This is problematic, though, for the children who have had limited opportunities and experiences even to become aware of their special abilities, let alone to explore and elaborate upon them. Their promise of potential is harder to identify. Thus in STREAM we cast the widest net when identifying high ability children and offer the most inclusive programming options to be sure not to overlook children whose high potential may be almost invisible (Tannenbaum, 1983). We accomplish this through the use of multiple forms of identification, traditional and non-traditional, and by erring on the side of over-identifying rather than under-identifying. We also give equal attention to both academic and non-academic abilities.

Equal attention to a range of abilities means that parity of esteem must exist for all talents that can be used in meaningful and productive ways. The value of a talent, however, will be determined by culture. While most identified talents will be valued across cultures, the degree to which they are prized as well as the ways in which they are manifested will vary. Thus, in identifying talents it is necessary to understand the cultural context in which students live and to understand the values of that culture. Attention to both academic and non-academic capabilities becomes critical, for a society may value one over the other. Generally, schools in the United States value verbal and mathematical academic talents

and in non-academic areas, athletic skills. A healthy functioning social order requires a variety of interlocking talents, however, and a commitment to identification and development of a broad array of talents recognizes that no talent is inferior to another. Each talent, at the outer reaches of its development and expression, is sublime.

Interests/Commitment

Exceptional talents are manifested first as potential. Similarly, talent will be revealed initially as an interest (Feldhusen, 1992). In the Talent Development Model interest must be matched by capability, and the two must interact. Over time and through multiple experiences, the student may increasingly take control of learning and developmental opportunities, and the metamorphosis from embryonic interest to commitment may occur. Eventually, for potential to be reached, commitment must evolve from the nascent interest.

Interaction between ability and interest is necessary but not sufficient. As in all cases of metamorphosis, for development to proceed properly to the limits of genetic endowment, the right environmental conditions must be present. Both potential and interest require nurturance. For talent to mature, there must be support from school and home for exploration of both ability and interest. Affective needs must be met as well as talent needs. When support systems for meeting these needs are missing or are especially fragile, substitute support must be provided. A mentor, tutor, community or school leader, even a peer group can provide the environment necessary for supporting the talent or interest.

While interest is often an early indicator of talent, occasionally we encounter a state that is both awesome and terrifying: Passion. This is seen in the student who never stops drawing or who is fascinated with numbers or who spends every free minute on a computer. Often the passion is accompanied by a well developed ability, and the commitment/capability interaction is fixed. Outside of the passion area, school may seem meaningless to such students. While we may see our task as one of helping the student diversify his or her interests, we may discover that the student is turning away from traditional developmental mechanisms such as school because of this consuming passion which requires non-traditional developmental support mechanisms. Our best hope may be to help channel the energy force in growth-determining experiences. This may mean acceleration, mentoring, or a variety of out-of-school experiences which we must facilitate and legitimize. Regardless, we need to be open to the possibility of encountering another Langston Hughes, Michelangelo, or Diego Rivera in any educational setting, including the most impoverished.

Opportunities

The third key component of the Talent Development Model is opportunity. Raw ability is seldom enough. Opportunities are the linchpin in talent and interest interactions. Without multiple experiences to explore an interest area or to test the strength of a talent, both interest and talent may die. Several years ago, Eric Heiden, a 7 gold medal Olympic skating champion, was asked in a television interview to assess his success. He began his response by saying, "Well, first of all someone gave me some skates." This is what opportunity is all about.

Eric Heiden, a 7 gold medal Olympic skating champion, was asked in a television interview to assess his success. He began his response by saying, "Well, first of all someone gave me some skates."

Without "skates" pools of talent may go unrecognized and undeveloped. The underrepresentation of disadvantaged and minority students in gifted programs suggests that an inestimable number of gold medal winners are being lost for the want of some skates--in the sciences, arts, and humanities--in all areas of worthwhile human endeavor. To counter such loss, the opportunity to reveal capabilities must be made available, and because skates need to fit, the opportunities must be varied and multiple. Tannenbaum (1993) has noted that the elements of luck or chance are often ignored in discussions of talent but that a certain amount of luck is always necessary in the realization of talent. It is easier to be lucky when conditions are created that make luck likely rather than just possible.

Talent development is never assured, but the likelihood of potential being realized is greatly increased when capability, commitment and opportunity are appropriately matched and

allowed to interact. The meshing of these three factors creates the zone of gifted development in the Talent Development Model. Within this zone, talent is more likely to emerge from potential and interest and be transformed into commitment.

Talent Development in Urban Settings

In many urban schools and schools with large populations of low income students, the first needs to be met are survival needs. Exploration of exceptional talents often has low priority. Yet it is from the recognition and development of talent that the most healthy survival will come. While the Talent Model is applicable in any setting, it has proven particularly effective in STREAM by providing direction for identification and programming in urban settings. The model assumes that exceptional potential is present in almost any educational setting, regardless of how difficult it may be to discover. And it reminds us that we must give potential and interest the best possible chances if they are to develop.

Urban schools have been described as sites of "withered hopes; stillborn dreams." (Maeroff, 1988). The societal environment of many urban children is more conducive to despair than to dreams. Our commitment as educators to finding potential and providing opportunities can help keep dreams alive. Several suggestions may be helpful regarding talent development in urban settings:

Assume the presence of exceptional talents manifested in extraordinary ways.

For example, within the family and local community, students may be recognized for leadership, courage and service. There are children who take on adult roles in caring for siblings, preparing meals, getting siblings to school when adults are at work, or making special arrangements when siblings are sick. These young people often show a remarkable degree of responsibility and outstanding problem solving and decision-making skills. Their abilities may be unrecognized by the schools and, in fact, on occasion may result in tardiness or incomplete assignments that may be attributed to lack of motivation.

Consider cultural context when identifying abilities, and for nominations tap resources outside the school, such as, parents, community leaders, or the local librarian. Adopt a concept of giftedness that embraces multiple abilities and that recognizes the talents esteemed within student cultures. Require multiple assessments, both traditional and non-traditional. There are enough tools to do this. What is needed is the will to use them and the determination to develop programs compatible with talents.

Provide opportunities for students to reveal talents

STREAM has developed several special activities intended to encourage the demonstration of talents. These activities, called ORCA (Opportunities for Revealing Concealed Abilities), range from dramatic improvisation to writing workshops to class activities that are open-ended and allow for personal interpretation of tasks. ORCA activities are particularly helpful for discovery of creative thinking, problem solving, leadership, and communication skills.

Include traditional means of identification as well as non-traditional

Many students will score very well on regular achievement tests. For example, over 10% of the STREAM students have qualified to participate in the Northwest Talent Search for precocious math students by virtue of scores at or above the 95th percentile on a standardized math test. The Search gives middle school students the opportunity to qualify for summer scholarship programs and to receive local and state recognition by taking either the Scholastic Aptitude Test (SAT) or American College Test (ACT). Prior to participating in STREAM, most of the eligible students were unaware of this opportunity; and some were unaware of their high test scores. The case was similar for students with extremely high verbal scores.

When we expect to find students with high scores on traditional tests, we look for them. Once they are identified we can advocate for the student with teachers and parents, campaigning for the most appropriate programming.

Assume the role of match maker

Do not do this alone. Collaborations play a critical role here, and urban settings offer many possibilities. Almost every urban institution can make some contribution to development of talent. Mentorships, internships, special programs or classes are examples. Partnerships can be established with performing artists, business leaders, television and radio personalities, musicians or sports figures. Many groups and individuals are eager to help young talent, but

do not know how. Approach them with a well devised plan.

Encourage student participation in pre-college programs

Many colleges and universities offer programs ranging from Saturday enrichment classes to day programs to summer residency programs. These opportunities not only nurture abilities, but introduce students to an environment which respects their individual talents, lauds brightness, and encourages—even expects—a college orientation. The programs usually provide students an opportunity to become familiar and comfortable with a college campus at an early age. Parents and family members also are frequently invited to participate in some aspects of pre-college programs.

Use the power of role models

Everyone needs role models, but they are especially necessary for young people who will be the first generation of their family to go to college or to receive special opportunities for talent development. They are equally important for students whose families may not have a history of educational opportunity, and family members as well as the students need the encouragement and example of role models.

Expect high achievement

Regardless of the special talent a student possesses, overall academic achievement should be expected. In most instances, this is a mandatory corollary to talent development since it is required for entrance to institutions of higher education. The absence of academic achievement may mean that talent potential will never be realized.

Respect resilience as a talent

Many young people are trying to cope with the demands of school while existing in impoverished circumstances, dysfunctional families and chaotic and depressed living arrangements. Some encounter pressure from family and peers to underachieve academically (Fordham & Ogbu, 1986). Many are fighting the pull of the streets and the lure of "easy money" from preying on the weaknesses of others. We must systematically provide support for young people to help them resist these forces which would limit their development and work to promote forces which will support their efforts to succeed in the mainstream of society. Recognizing and valuing talents and abilities is one way to do this, and providing opportunities to develop those talents is what encourages their dreams and extends their vision.

Our society cannot continue to ignore those traditionally underrepresented in gifted programs, for in doing so we sabotage excellence. There is no excellence without equity, and equity is a matter of will and commitment. It is not the absence of talent which leads to a disproportionate identification of gifted, but the absence of our willingness to find and to develop the talents.

Project STREAM (Support, Training and Resources for Educating Able Minorities) is a collaborative program between a university system and five public school districts. Gifted students are identified in sixth-grade and provided with systematic academic and social programming through middle and senior high school. STREAM has been supported in part by a Jacob Javits Grant (R206A001 88), UW-Wisconsin Office of Continuing Education, and the Dept. of Public Instruction.

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Dealing with the Challenges of Reform and Restructuring: Will Gifted Education Survive?

by Donald J. Treffinger

In this paper, let us consider some issues that are at the very core of the welfare—and quite possibly, the survival—of gifted education, not only decades from now, but likely within the next three to five years. The need to deal with these issues arises from a very sincere concern that children and youth need, and deserve, educational opportunities that are commensurate with their abilities and that will recognize and nurture their talents, strengths, and sustained interests. We cannot permit education to dissolve to doing the same things to herds of students, in the same way, over the same time period, and in the same setting for everyone. Designing "a level playing field" should never mean creating artificial impediments for learning for anyone. We can speak all we want about "world class standards," but unless we take the difficult actions to bring out the best in everyone, we seem to be "talking the talk without walking the walk." In gifted education, our role must be to work with school reformers to make restructuring or school improvement a staging platform for serious, extended, creative efforts by professionals and community members, joining together, to design and implement new images of learning and productivity for everyone.

School improvement is a broadly encompassing effort, challenging all of us to create and hold a vision of what schools might become and to find and build the best potentials in everyone—not just to create "repair stations" for fixing up deficiencies. We dare not place our attention on school improvement solely on its serving as a vehicle for remediation and minimum competencies. If such an outlook becomes entrenched, the minimum competencies too easily become maximum expectancies. Whether or not one is an advocate of gifted education, a school improvement effort that focuses only on minimal expectations is fundamentally condescending. It can all too easily become, "Look, you're not going anywhere. You're dumb. You're not successful now, and you probably won't ever be. You don't have any worthwhile talents. And you sure as anything can't do any complex creative or critical thinking, problem solving, or decision making. For you, it will be good enough if we can get you up to a point where you won't do harm to yourself or to others, and (we hope) where you won't be too much of a nuisance for us in the future."

Those of us concerned with programming for giftedness and talent development surely have an important message to bring to the school reform movement in this regard. We need to be part of the school reform, restructuring, or improvement dialogue, because if we are not, no one else may be able (or perhaps willing) to bring the message we can carry to the schools (Tomlinson & Callahan, 1992; Treffinger, 1991 a). It is important, however, to be quite careful about what our message will really be.

Our message needs to be: "We can do better than settling for mediocrity and minimum standards—*for everyone!* Moreover, we **must** do better; we cannot afford to waste anyone's talents in today's world.

Our message needs to be: "School improvement is an on-going process, not a one-shot event. All of us in the educational venture must make deliberate efforts to make schooling a process of seeking, finding, and becoming immersed in learning—in what students can do best, and in ways that will help them become as productive and powerful as they can possibly be."

Our message needs to be: "School improvement is not just a matter of slogans about Zero Defects or Commitment to Quality. Excellences arise from continuous efforts to improve, combined with an openness to and encouragement of innovation. Our challenge is to forge a new vision, in which every teacher, every administrator, every student, parent, employer, and community member assumes a commitment to discovering and developing talents to their fullest."

We might believe that this is the message we've been sending. But there is cause for some doubt about that. There are some reasons to be skeptical that it has been our message, and we can be certain it is not the message many educators throughout the country have been hearing

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from gifted education. All too often, our colleagues have heard a message best characterized as one of elitism and special interest for a narrowly--and arbitrarily-defined group. There is a very real and grave danger that we have defined ourselves out of the mainstream of school reform, and hence perhaps committed professional suicide in the process.

Considering experiences from more than two decades of involvement in gifted education, throughout the United States and internationally, we might well be increasingly concerned with the present state of the field. The amount of "gifted program bashing" has been increasing greatly, in the media generally, among many professionals in education-at-large, and, most threateningly, in the form of greatly reduced or eliminated support for programs in many places. Even more to the point, however, we must become increasingly concerned about what is taking place within gifted education. As Pogo once said, "We have met the enemy, and it is us."

First, by and large, gifted education seems to have approached school reform in a posture of avoidance ("This, too, will pass.") or one of defensiveness ("Let's pull those wagons around in a circle."). But the reality is that school reform will not pass; it is here to stay, and our task will never again be the same as it was before. At all levels, from local school districts to national conferences, there have been clear indications of active resistance, defensiveness, and hostility, in which the school reform movement is often viewed, implicitly and sometimes explicitly, as "the enemy." In many ways, we ought to be embracing school reform with enthusiasm, for, if done well, it could become our strongest line of support.

We must also recognize a great need to hold our own traditional views of gifted education up for careful reexamination. Too much of the time—but certainly not in all instances—gifted education seems to be permanently frozen into a view of giftedness, identification, and programming that is outdated, and no longer viable in relation to theory research support, or practice. The common wisdom of the early 1970's served a laudable purpose: to create awareness and interest. We learned our lessons well back then, as youngsters memorizing Catechism lessons, but in too many ways, we do not seem to have grown much (Treffinger, 1991c). We learned the right answers to the key questions: the categorical definitions, the 3-5 % incidence, multiple selection criteria, and the qualitatively differentiated curriculum. The responses of 1971 will not be satisfactory for the questions of today or tomorrow.

In the face of pressures all around us in education to seek a new vision of teaching and learning, to recognize and respond to diversity, and to work towards continuous improvement, the traditional catechism of gifted education has not played very well. We must at least entertain the view, as unappealing as it may be, that our current reality came about because the traditional answers we memorized **should not** have played well. This view would lead to the need to rethink and reexamine the long-held views on which much of gifted education today has been constructed. We need to do this, not just from a sense of expedience, not just because it might help us to "play better" in the drama on today's educational stage, but because it is the right and necessary thing for us to do. In that effort, we need to reexamine three major issues.

Nature of Giftedness

We must shed our limited thinking that giftedness is defined as one's place in a normal distribution of some one-dimensional, fixed set of traits or abilities such as those measured by traditional intelligence or achievement tests. Perpetuation of the view of gifted as high IQ or achievement, within a narrowly defined construct of academic ability, is a myth that has been inadequate and indefensible for decades. Writers such as Gardner (1983) on multiple intelligences, or Feldhusen (1992) on talent development, for example, are contemporary scholars who are pushing our conception of giftedness and talents far beyond the limited traditional view of "the gifted." The challenge is not only recent, however; we would also do well to rediscover the fundamental messages of E. Paul Torrance, J. P. Guilford, and Calvin W. Taylor from the 1960's and earlier!

We really need to begin to think of giftedness, not as a static, fixed, unidimensional category, but as a dynamic way of describing a person's track record of creative or talented accomplishments, over a sustained period of time, in a domain that matters intensely to the person. In this sense, giftedness is not only a trait or characteristic that exists within an individual's mind or personality (Dunn, Dunn & Treffinger, 1992; Treffinger, 1991 b; Treffinger & Sortore, 1992). Giftedness is a function of

- our cognitive abilities, personal characteristics, styles and preferences, and sustained interests;

- the strategies or operations we learn and apply (such as creative and critical thinking, problem solving, or decision making);
- the context or environment in which we function;
- the outcomes or products towards which our efforts are directed.

We should think of giftedness as a person's sustained accomplishments, in a context, towards important goals, over time.

Identification

Certainly, this view of giftedness will have considerable impact on our approach to identification. We must move away from the view of identification that emphasizes labels, selection, and categorical placement. ***Instead, we should be seeking new ways of recognizing many kinds of talents and strengths in students.*** Instead of asking, "How creative are you?" for example, our research has suggested that it is much more powerful and instructionally informative to begin with the question, "How are you creative?" We would do well to create new emphasis on identifying needs—opportunities to serve students better rather than on identifying students and asking, "Are you really one of them, or not?" We might seek ways to make identification flexible, inclusive, diagnostic, and focused toward talent development.

Programming

We have persisted in the quest for "The Gifted Program," when we should be much stronger in pursuit of multi-option programming. Empowering, creative instruction can never be "one size fits all." The great array of talents among students demands that we seek many and varied instructional responses. The idea of a single, fixed program for a limited group of students must give way to a much richer, more varied (and more comprehensive) array of programming possibilities.

We need to continue to be strong and persistent advocates for educational programming that recognizes and responds to students' strengths and talents. But the complexity of that challenge is far greater than we have heretofore envisioned. As we consider the changing world of education, and the new perspectives we need for gifted programming, we can identify many areas where there are dangers on either side of a channel, through which we must navigate very carefully.

First, we do not want students to have their strengths, talents, and interests buried in dull, boring dismal instruction in classrooms in which teachers are forced to teach down to the lowest denominator. We must clearly say, "That kind of instruction is no longer acceptable *for anyone.*" By the same token, we cannot respond to a full array of strengths and talents through a single, 'patched- on,' pull-out gifted program for a narrowly defined, fixed group of students. Let us not substitute one rigid, unresponsive kind of program for another! We need to press our efforts for effective programming across many areas (Treffinger and Sortore, 1992), including:

- *Individualized Basics.* Schools must attend to the needs of students to experience challenging instruction in all core subject areas. All instructional programs should recognize and respond to different learning styles (Dunn, Dunn, and Treffinger, 1992), and include opportunities for higher level or productive thinking.
- *Appropriate enrichment.* A rich and effective school program provides a wide variety of enrichment opportunities for all students, to help stimulate curiosity, to heighten anticipation for learning, and to serve as a foundation for extended learning (Renzulli & Reis, 1985 ; Torrance & Safter, 1989). All students benefit from appropriate enrichment, in different and varied ways. Enrichment is a springboard through which many talents can be recognized and nurtured, not just a reward or privilege for a few predesignated students.
- *Effective acceleration.* Students need opportunities to progress at an appropriate rate or pace. Appropriate and flexible grouping for challenging instruction (which must not be mindlessly equated with "tracking") must be provided for all students, in ways that will benefit everyone.
- *Independence and Self-Direction.* The development of self-directed, independent, or autonomous learning skills has been emphasized in many national and state educational reform programs. We share, and can contribute substantially, to these efforts (Betts, 1986 ; Feldhusen, 1990; Treffinger, 1986; Treffinger & McEwen, 1989).
- *Personal and Social Development.* The effective school program helps all students to seek and develop their strengths, talents, and interests, and provides opportunities for students to blend individual accomplishment and success with the collaborative and teamwork skills essential in today's world.

Second, we do not want students to be victimized by lack of challenge masquerading as egalitarianism or cooperation. By the same token, recognizing that talents and strengths exist much more widely than we have heretofore considered in gifted education and can be nurtured through effective instruction, we must not create or support arrogance and elitism. Much of the criticism we have experienced may well have been of our own making; like Marley's ghost, we have forged our own chains, link by link.

Third, we do not want to create a system in which many students are underserved and undertaught because of color, creed, geography, poverty, or handicaps. By the same token, we need to recognize that we will not solve these problems simply by tinkering with tests and cutoff scores and then placing students in fixed programs that are unresponsive to diverse instructional needs. The important question should be how to recognize and respond to the talents and needs of all students, not just to find better ways to decide who should be "in or out."

Fourth, we do not want a standardized curriculum in an inflexible school day, in which students might be denied the opportunity and time to discover and pursue their talents. By the same token, we need to respond to the authentic talents and interests of students, not to groupings formed through arbitrary criteria that do not really describe a community or domain of inquiry. (We often say, "Gifted students need time and opportunity to be with others who are similar to them." It may be much more accurate to suggest that specific talent and interest areas drive this need, and its satisfaction, far better than any traditional gifted criteria might.)

Fifth, we do not want to want to place so much emphasis on being "well-rounded" that we fail to recognize the importance of passionate pursuit or immersion in one's talent. Being well-rounded is a laudable focus only if one aspires to grow up to be a golf ball. By the same token, we must not overlook the value and importance of being able to communicate effectively, or of being competent and knowledgeable about the worlds of the arts, humanities, and sciences around us, or of being able to function as collaborator in a group or team.

Finally, we do not want to perpetuate the misunderstanding that one teacher, alone in a classroom, can be everything to everyone. By the same token, we should not be satisfied with gifted programs in which we remove a few students from the regular classroom, in order to do for them (or "to them") a set of activities that really should be happening in a good regular classroom for all children. We must use school improvement as a vehicle for drawing into the total school program many of the strategies and resources that, for years, have been the staples of the gifted program. As (and not, "if") school improvement accomplishes its most important goals, we will increasingly recognize that we no longer will need to make up for what should have been happening in the regular program (but was not).

With a view to the future, we must begin thinking, now, about programming for giftedness in the kind of schools we want to create, not the kind we used to have. This will be quite likely to lead us in the direction of creating many and varied services, offered by many people, in different ways and places, for students with many different kinds of strengths and talents. We need to turn our focus from being "gatekeepers" to becoming "prospectors for potentials." Instead of "the gifted program," we might think more about programming for giftedness and talent development. The outline for a new paradigm for gifted education has already begun to take shape (Dunn, Dunn & Treffinger, 1992; Feldhusen, 1992; Treffinger & Sortore, 1992). Its structure and dimensions are evident in ways that are possible to implement at the state or school district levels. We should not be naive about the challenges that paradigm shifters and pioneers face. Old paradigms struggle against their demise, and do not slip off quietly into the night. But it is no longer possible to invoke those challenges as justifications for failing to move where we know we should go. We teach our students to be creative thinkers and problem solvers; we must ask no less of ourselves!

If we can just focus and direct our attention and efforts to "doing the right thing," the challenges of policy and funding can be overcome. The policies and narrow, exclusive funding caps we have today can be changed by the very same mechanisms through which they were created. In fact, we believe that advocacy for an inclusive, contemporary view of talent recognition and development is quite likely to garner much greater and broader enthusiasm and support than the traditional approaches to gifted education were ever able to command.

This is not to say that the task will be easy; it will not. The winds of change are blowing

with great force and gusto in education these days. Everyone feels overwhelmed, or nearly so, with new demands, new priorities, new pressures. More and more is added to our platter, but nothing ever seems to be taken off. Confronted with these pressures, with conflicting demands, and with uncertainty about the best course to follow, it can be all too tempting to retreat to the comfortable and familiar ways of operating. We dare not yield to that temptation. It will surely have dire consequences, and it falls short of the promises we must make—to our students and to ourselves. Keep in mind the challenge of Robert Frost:

The woods are lovely, dark and deep.
But I have promises to keep,
And miles to go before I sleep;
And miles to go before I sleep.

I Have a Friend

I have a friend who lives in my house.
He sits with me on the steps,
and follows me down the street
to the park, where he hides in the trees
and whispers in my ear, "You can't catch me!"
In the summertime we are at the beach.
He swims underwater, dancing and shaking
and never holding still even when I hold my breath.
Sometimes he is short and fat,
and sometimes he is so tall
he can touch the treetops. He can slide up a wall
or hip-hop down the stairs. He warns
the butterflies when I am near.
He goes places I can't follow.
He keeps my dreams secret and safe.
But when the sun goes down, he disappears into
the darkness. Night falls, and I go home.
In the morning he will be waiting with the sun.
He is yesterday's night. . .
left for the day.

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Continued from page 1

ished in the United States following the Marland Report (1972) viewed giftedness as a fixed, unitary trait manifested dichotomously. That is, some youth or people have it, most do not. This concept also favored the view that giftedness is genetically determined, a view promoted by Terman's (1925) master titling of his series of research reports *Genetic Studies of Genius*. Even though the Marland Report had delineated six types of giftedness, program developers for the most part adapted a unitary definition in which children were simply classified as gifted or not gifted.

In contrast to the unitary trait concept, it seems likely that most youth have intellectual strengths, but those strengths are diverse. Starting early in the elementary grades some children show talent or aptitude in mathematics, others in verbal communication activities, and some in other talent domains. Later some will exhibit their budding talents in home economics, creative writing, learning a foreign language, or dramatics. There are wide differences among youth in both their aptitudes for these diverse areas and in their interest or motivation to pursue studies in them. Nurture and nature operate simultaneously; school, home, and community experiences seem to foster growth of the special talents, and they provide educational opportunities for the requisite skills associated with the talent area. "Gifted" is a static concept. It is fixed. Talent and talent development are dynamic concepts in which individual students and their special abilities can grow and develop with nurturance.

Some youth demonstrate high or extremely high levels of special talent in relation to their ages. The child who reads at age three, the student who learns calculus in grade eight, the college freshman in science at age sixteen are all examples of youth whose talents are extremely advanced. These students exhibit precocious learning behavior. Others exhibit precocity in ways that do not so clearly show the grade level disparity. Students who show high levels of problem solving skills in a shop class, those who write excellent poetry in a high school English class, and student actors who exhibit extraordinary empathy with the characters they are portraying reveal special talents which traditionally have not been seen as manifestations of giftedness. Nevertheless, they are valuable indicators of potential for high level achievement or accomplishment. Such talent indicators may appear in all youth (including minorities, the economically disadvantaged, and the culturally different).

School programs must undergo change from traditional conceptions of the gifted few which favor select subgroups or populations and concentrate efforts instead on finding and nurturing special talents and abilities among all youth. It is truly time for a new program, Talent Identification and Development in Education (TIDE). TIDE will serve us much better as a way of meeting the special needs of diverse school populations, as an approach to talent development among all youth, and as a means to serving the needs of our society in the emerging technological age.

Definitions

Talent is a complex of aptitudes or intelligences, learned skills and knowledge, and motivations/attitudes/dispositions, that predispose an individual to successes in an occupation, vocation, profession, art, or business (Gardner, 1992). Aptitude refers to specific abilities. Intelligence(s) is predominantly genetically determined ability or aptitude. Expertise is the capacity to function at a high level of proficiency within a domain of activity. Precocity is knowledge or skill in an individual at an age earlier than normal. Giftedness is a complex of intelligence(s), aptitudes, talents, skills, expertise, motivations, and creativity that lead the individual to productive performance in areas or domains or disciplines valued by the culture and time. Genius is giftedness which produces new conceptual frameworks that lead to paradigmatic shifts in a discipline, art form, profession, or field of business-economics.

Conceptions of Talent

A number of researchers, theorists, program developers, and curriculum specialists in gifted education have proposed and used the concept of talent as a framework for studying and/or developing human abilities. Some have used the term very specifically while others have used it interchangeably with giftedness.

Gardner (1983) proposed a new framework for conceptualizing human intelligences or talent based on a review of a wide variety of psychological research:

1. Linguistic : writer, poet
2. Spatial : sculptor, architect
3. Musical : composer, musician
4. Bodily, Kinesthetic : athlete, dancer
5. Logical, Mathematical : scientist, mathematician
6. Intrapersonal : psychiatrist, counselor

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7. Interpersonal : teacher, salesman

These intelligences might best be seen as the early, more general forms of ability, highly genetically determined, that find focus later in more specific talents as shown in the list above after the original category name. Gardner (1992) also speaks of a "giftedness matrix" which emerges in youth as a combination of two or more of the intelligences, acquired knowledge, skills, and interests-motivators. All are conditioned or developed by the range and nature of experiences available to the individual. The context for the development of talent begins in the family, extends to school and family, extends increasingly to peer influences, then to the influences of experts and the culture, and finally to high powered influence from the domain or discipline in which one is emerging.

In the statement cited earlier in this paper concerning gifted education and the school reform movement, Renzulli and Reis (1991) assert that "Talent development is the 'business' of our field" (p. 35). This statement links well with the talent domains which can be inferred from the Renzulli et al. (1976), Scales for Rating the Behavioral Characteristics of Superior Students:

1. Learning Characteristics
2. Motivational Characteristics
3. Creativity Characteristics
4. Leadership Characteristics
5. Artistic Characteristics
6. Musical Characteristics
7. Dramatics Characteristics
8. Communication Characteristics-Precision
9. Communication Characteristics-Expressiveness
10. Planning Characteristics

One of the most extensive efforts to clarify the concepts of giftedness and talent was presented by Gagne (1985). He suggested that giftedness is most often associated with general intellectual ability (g) while talent denotes more specific skills or aptitudes. He also reviewed the formulations of Cohn (1981) and Foster (1981), both of whom proposed a social domain of talent, and recognized leadership and altruistic orientation as talents in the domain. Gagne concluded from his review and analysis of the concepts of giftedness and talent that general giftedness which manifests itself in four major domains (intellectual, creative, socio-emotional, and sensori-motor) emerges, as children move through the school years, as specific talents, mediated by family, school, personality, interests, attitudes, and identification experiences. Talent emerges as the specific ability that will facilitate learning or development in a particular occupation.

Feldhusen (1986), Koopmans-Dayton (1986), and Koopmans-Dayton and Feldhusen (1987) have presented evidence from research showing that vocational educators recognize giftedness and talents among youth enrolled in vocational classes in agriculture, business, trade-industrial, and home economics. Furthermore, teachers in these areas identified the specific characteristics which they saw as evidence of special talent. These characteristics included such traits as high skill in designing and conducting projects, resourceful in finding sources of information and materials, and superior problem-solving ability. This research showed that teachers in the vocational areas not only recognized (identified) youth with special talents but also provided special educational opportunities for them on an individualized basis.

Gardner's (1983) conception of multiple intelligences has been used as the base for the model educational program implemented in the Key School in Indianapolis. These intelligences may be viewed as representing broad talent domains. Gardner and Hatch (1989) argued that "...the concept of intelligence has remained central to the field of psychology." Central, however, to the theory of multiple intelligences is the concept that there are multiple intelligences and each of the intelligences varies independently in individuals, and individuals show unique profiles of relative strengths and weaknesses among the seven intelligences. Pilot educational projects based on the theory of multiple intelligences have progressed to the point where Gardner and Hatch conclude that "...our programs with both older and younger children confirm that a consideration of a broader range of *talents* (our emphasis) brings to the fore individuals who previously had been considered unexceptional or even at risk for school failure" (p. 7). The theory and its application seem to support the talent conception presented in this paper, and we applaud the use of the terms "talent" in the quotation.

Again, overlapping with the several talent models described so far is a framework reported by DeHaan and Kough in 1956 under the rubric of a system for identifying gifted and talented students: (1) intellectual ability, (2) scientific ability, (3) leadership ability, (4) creative ability, (5) artistic talent, (6) writing talent, (7) dramatic talent, (8) musical talent, (9) mechanical skill, and (10) physical skills. The shift in terminology among "ability," "skills," and "talent" as well as their reference to giftedness reflects considerable uncertainty about the phenomena of human ability.

The work of DeHaan and Kough (1956) undoubtedly influenced the framers of the Marland Report (1972) and its six categories of "giftedness:"

> *"**Gifted and talented** [our emphasis] are those ... with demonstrated achievement and/or potential ability in ..(a) general intellectual ability, (b) specific academic aptitude, (c) creative or productive thinking, (d) leadership ability, (e) visual and performing arts, and (f) psychomotor ability" (p. 3).*

While the field of gifted education embraced this definition for nearly two decades and echoed the overarching conception of "gifted and talented," prevailing practice adhered most of the time to the unitary conception of giftedness which is closely related to the "g" conception of general intelligence. There was also much criticism of the Marland Report categories (Renzulli, 1978) as representing non-parallel and overlapping conceptions of ability.

Much more recent is the conception of talent set forth by Bloom (1985) in his study of talent development. He

proposed four distinct areas of talent: (1) athletic or psychomotor, (2) aesthetic, musical, and artistic, (3) cognitive or intellectual, and (4) interpersonal relations. Later the fourth area was dropped because of difficulty in finding definitions or criteria for superior performance in that area. Within each of the first three areas two specific talents were selected for intensive research: (1) swimming and tennis in the athletics or psychomotor domain, (2) concert pianists and sculptors in the aesthetic-musical-artistic domain, and (3) research mathematicians and research neurologists for the cognitive-intellectual domain.

From the intensive case studies of the lives of talented people Bloom (1985) concluded that talent potential is present in many children. Talent growth clearly can be facilitated by family and teachers, early recognition and nurturance is vital, and motivation is a crucial ingredient. He concludes: "All of this is to point to the enormous human potential available in each society and the likelihood that only a very small amount of this human potential is ever fully developed. We believe that each society could vastly increase the amount and kinds of talent it develops" (p. 549).

The conception of talent is also clearly present in the "talent search" projects growing out of the research and development of Stanley (1976, 1984) at Johns Hopkins University. The Scholastic Aptitude Test, used as the testing instrument in talent searches, yields scores for two broad areas of ability, verbal and quantitative. Keating (1979) suggested that the course of development of abilities is from the very general type of aptitude represented by an intelligence test score through increasing differentiation of abilities as represented by verbal and quantitative scores and on to specific vocational aptitudes represented by one or more talents.

We would argue that the term "talent" should be used to denote the specialized aptitudes or abilities that develop in youth as a function of general ability, "g," or intelligence, and of their educational experiences in home, school, and the broad community. Talent grows as youth develop specific skills, interests, and motivations. Increasingly the general talent domain defines a more specific occupation and increasingly merges with expertise. For some youth and adults, talent and expertise will unite with divergent or creative abilities; they become the creators, innovators, inventors, composers, writers, architectural designers, theorists, or developers of new paradigms.

A Proposal: Talent Identification and Development in Education (TIDE)

From the review of conceptions of talent we propose four general domains for talent development in schools, depicted in Figure 3: Academic-Intellectual, Artistic, Vocational-Technical, and Interpersonal-Social.

These four domains should not be viewed as encompassing all talents. There are certainly many more. However, these four domains are especially useful at the middle and high school levels because they are correlates of subject matter areas, specific courses of instruction, and/or curricular and extracurricular school programs. Identification or talent search procedures already exist for most of these domains of talent, and the procedures can be applied as a part of the search for talent among all students, not just as identification of the gifted few.

There remains the problem, however, of matching youth talents to specific resources and activities that may foster or enhance talent growth and development. Teachers, counselors, and parents can do much to guide youth to appropriate resources and facilitate their use, but talented youth who are aware or becoming aware of their talent strengths should be involved in the search and matching process themselves. Treffinger (1986) and Betts (1986) have pioneered the concept of independent or autonomous learning. Feldhusen (1986) presented a planning model and instruments designed to help gifted and talented youth in the process of planning for and selecting learning activities to foster their own talent development.

There is no single program model that will optimize a child's talent development. A variety of services and resources are needed to match the child's talent strengths and provide the nurturance for continuing growth of those talents. School programs should be eclectic, using a variety of resources to meet the needs of talented youth. Talented youth themselves should increasingly be taught to recognize and understand their own talents, to join in the effort to find nurturing resources and activities, and to become independent or autonomous in guiding their own talent development.

Talent Identification and Development in Education (TIDE) offers a conception of giftedness and talent that should replace older conceptions of "The Gifted Child." From both parents' and school's points of view the most important things to know are children's talent

Conclusion

strengths or foci and how to nurture those talents to help children achieve to the highest level possible. To be sure, the school must address the goals of educating children in all of the areas typically addressed by schools - in a sense, the basics. But the TIDE conception asserts that all or most children have specific areas of talent strength or aptitude that should be addressed. Some children have great talent potential which calls for even more powerful nurturance or educational interventions.

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